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Established 1835

Railway & Commercial Gazette

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LONDON, JUNE 18, 1954

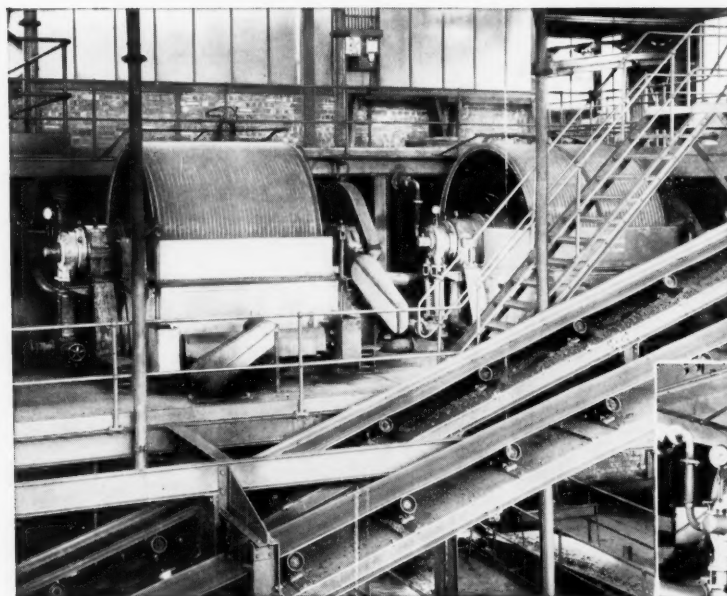
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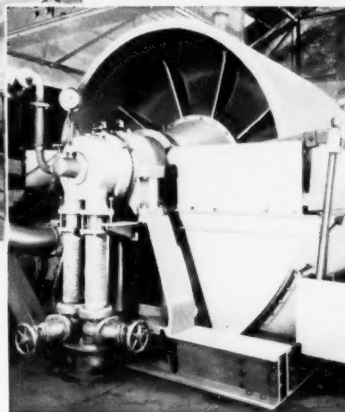
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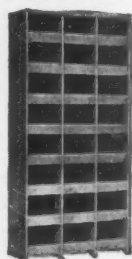
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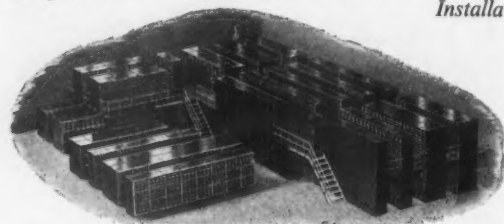


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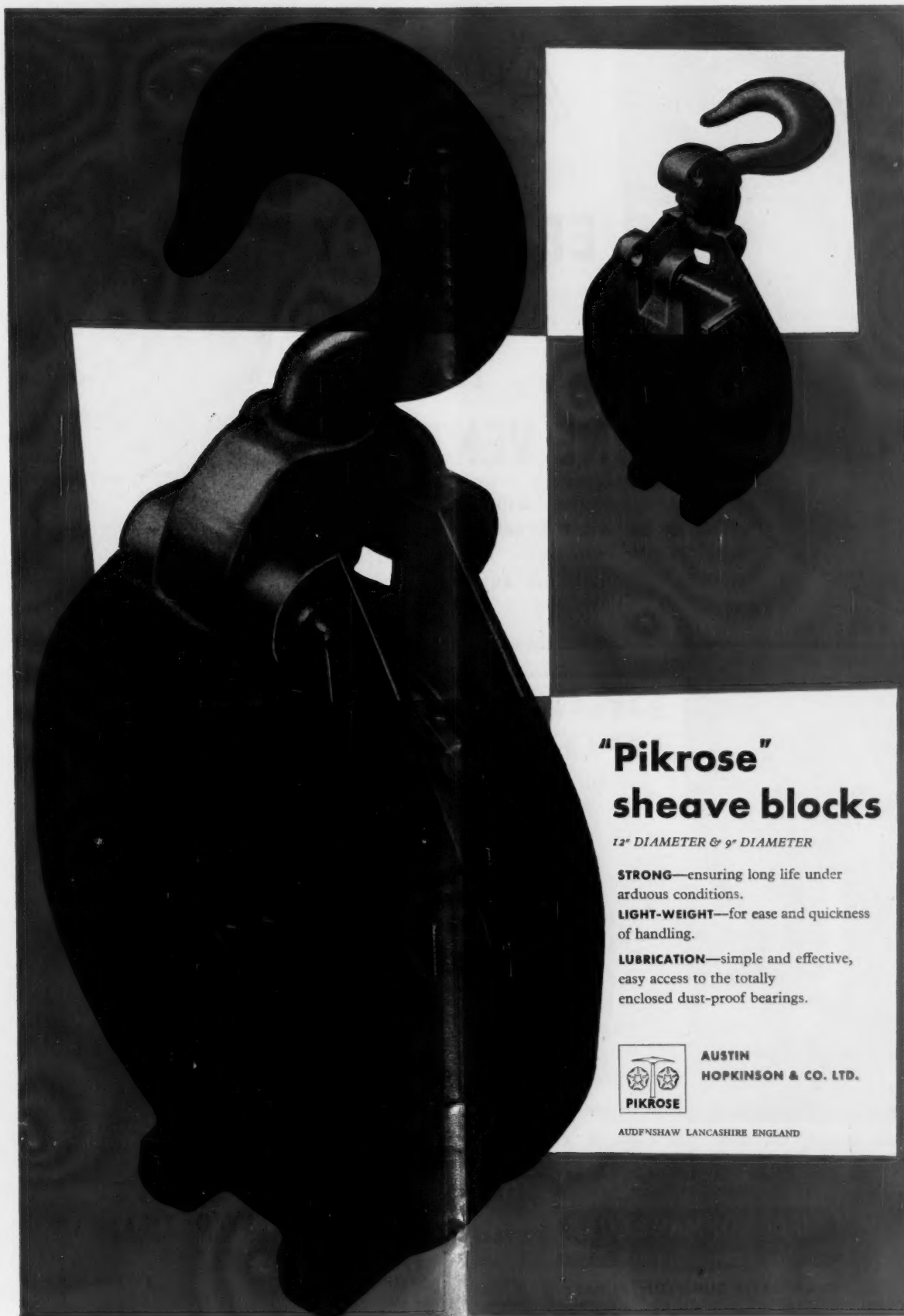
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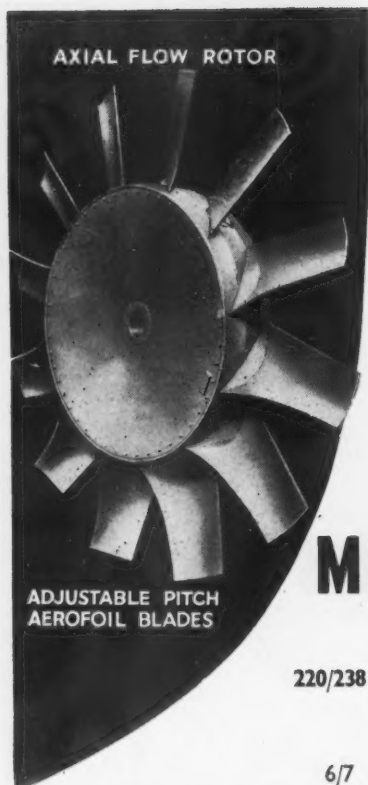
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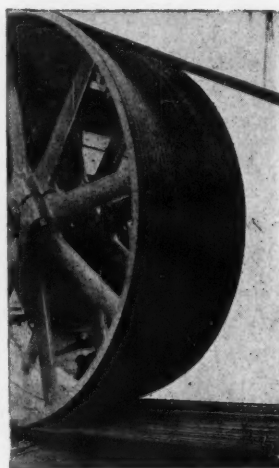
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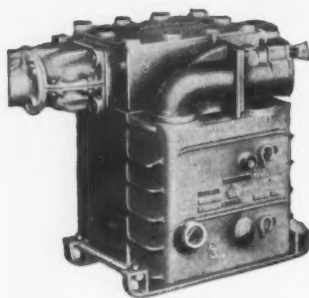
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Three outlets for interlocking and control circuits plugged in power unit assembly.

Instruments fitted if required.

Earth leakage protection and test circuit.

Pluggable type overload assemblies.

Specification P3/1950



Designed to N.C.B. Specification, these additions to the Siemens-Schuckert range of Flameproof Gate-End Panels incorporate the well-known single lock cover and make use of light alloy casings.

Raising the cover by the single screw bolt automatically disconnects the supply control circuit, already isolated by the generous-sized 3-phase reversing isolator. The plug-in contacts are, therefore, unable to make or break on load current.

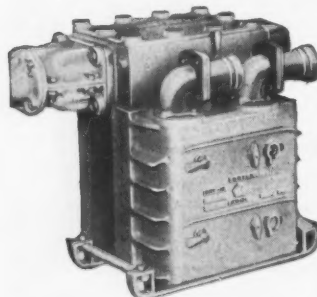
Automatic protection is provided against earth leakage, normal and short circuit overloads. Earth leakage is not only indicated but fitted with a testing arrangement. This range of Panels is designed to bolt together to form multi-Panel Boards. Each or any Panel will line up with any other make of Panel to the same N.C.B. Specification when using standard busbar connecting boxes and specified skid mountings.

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Depth of tank	19¾"
100 Amp and 30 Amp 4-pin restrained and bolted plug socket assemblies available.	

Type BDT.10 Double Unit Drill Panel



Pilot circuit on each of two drill circuits to latest intrinsically safe requirements.

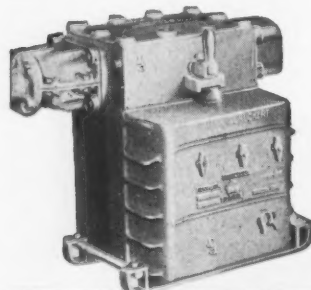
Earth leakage protection independent for each circuit and fitted with indication and test circuits.

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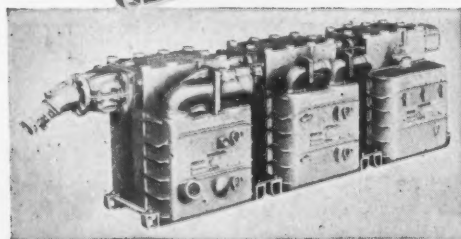
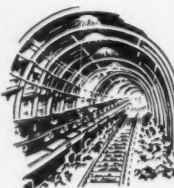
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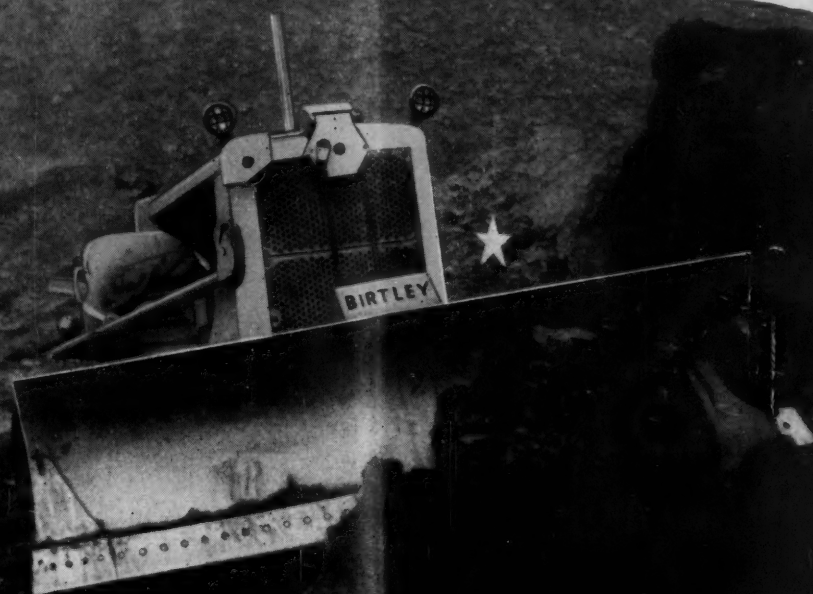
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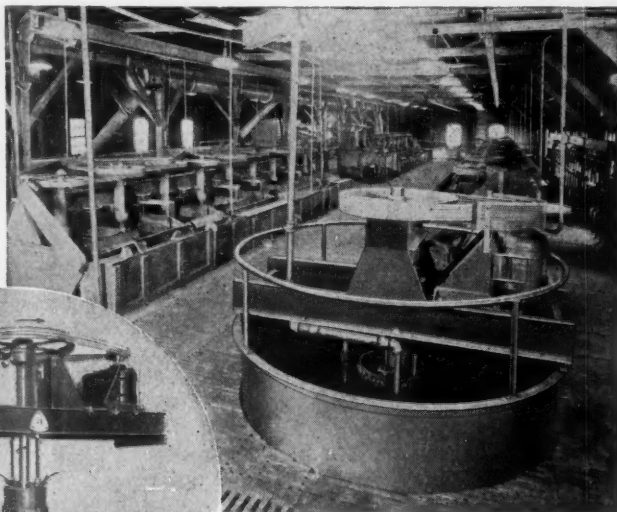
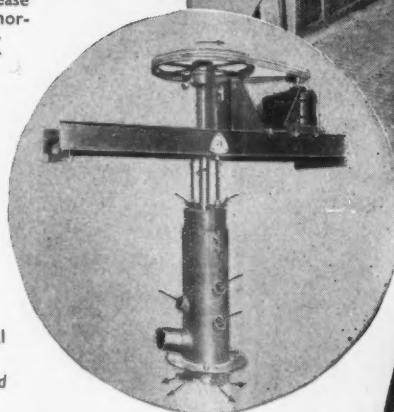
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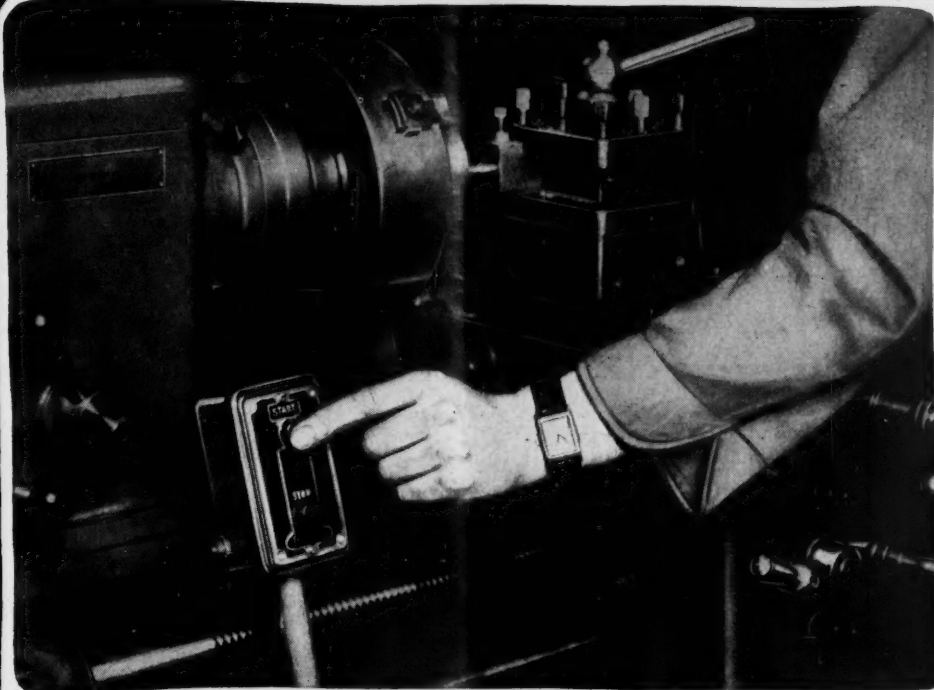


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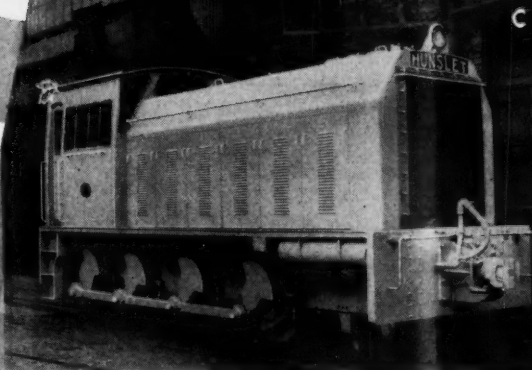
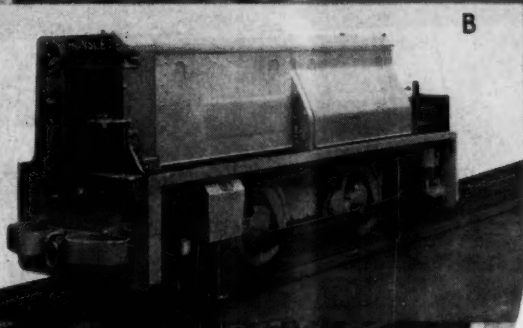
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LEARNING THE ROPES



The diagram shows the end section of a Locked Coil rope made by British Ropes Limited.

LOCKED COIL ROPES are constructed with one or more outer coverings of interlocking wires. This method of construction assists in retaining wires in their original position if they should fracture and so they are less liable to unravel and damage adjacent wires.

All ropes made by British Ropes Limited are carefully lubricated during every stage of manufacture. The interlocking wires of a Locked Coil Rope retain this lubricant with the result that the rope is much less liable to internal corrosion.

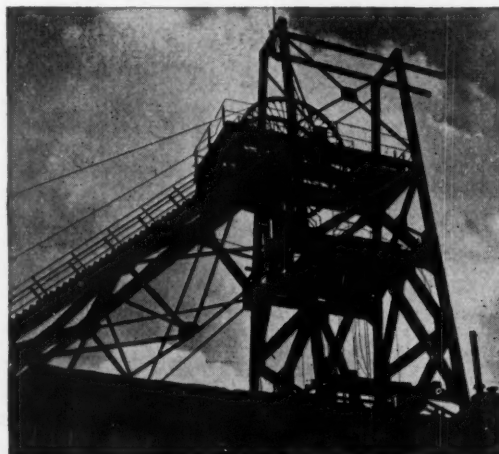
The advantages of Locked Coil Ropes can be summarised as follows:

- Size for size they are of greater strength than stranded ropes.
- The smooth exterior surface gives great power to resist wear by friction.
- They are less subject to rotation and stretch than stranded ropes.
- The modern Equal Lay centre reduces internal friction.

Other specialised ropes made by British Ropes Limited include:- Equal Laid, Blue Strand Preformed and Flattened Strand Ropes; Braided Slings.

Locked Coil Ropes can be conveniently divided into the following groups:

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A typical application of Locked Coil rope.

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The Mining Journal

Established 1835

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NOTES AND COMMENTS

Convertibility an Impending Reality

O.E.E.C. officials have been discussing problems of convertibility in Paris this week in preparation for discussions between European ministers which are due to be held in July in London; these talks, too, are primarily a preparation for the meetings of the World Bank and the International Monetary Fund in September in Washington. There are two striking features of the present talks. The first is that they are taking place within O.E.E.C. Whereas the problem of sterling convertibility has hitherto been one primarily for this country and for the other members of the sterling area the shift in scene reflect, of course, the apparent eagerness of Belgian, Holland and Germany to make their currencies convertible. Since none of them are international currencies they could, technically, be made convertible in the same way as the Swiss franc but it would plainly be a safer operation if all, or most of the E.P.U. currencies (and certainly sterling) could be made convertible simultaneously. The second feature is the strong shift in sentiment on the feasibility and desirability of making sterling convertible in the foreseeable future.

Hitherto, it has been a unanimously agreed pre-condition of sterling convertibility that the United Kingdom's gold reserves should be vastly enhanced. There has never been any agreement on the level to which they ought to rise because there has never been an agreed formula for the ratio of gold reserves to indispensable imports. The extreme American view has been that the importance of reserves has been exaggerated; that given the necessary internal financial orthodoxy, convertibility could succeed and that without it convertibility would fail whatever the level of reserves; they have prayed in aid the experience of the 1920s, and of pre-1914 when Britain managed the gold standard on reserves of only £35,000,000. The British view has been shaped by the effects of the convertibility experiment in 1947 and of the mild 1949 American adjustment when production fell by 4 per cent; it has consequently demanded a level of reserves which might be reached by raising the dollar price of gold, or by establishing a new exchange fund (something far larger than the I.M.F.) but not—at least in this century—by the accumulation of reserves from the normal flow of trade.

Britain has, therefore, pushed on towards convertibility by freeing commodity markets and by tidying up the variants of sterling while looking to the United States to take the single and all important step. At the present time all important commodities except wheat and cotton can be bought in England for sterling even though they may have cost England dollars to put them on the market. Furthermore, transferable sterling can be exchanged for dollars at a rate within the official exchange limits. The pound is nearly convertible. On the other hand there is no sign whatever that the United States will rise its buying price for gold, and progress in implementing the Randall report has been negligible. What has—for some people—completely altered the picture is that the United States has undergone a recession, from which she now appears to be emerging, during which production has dropped by more than 10 per cent and the United Kingdom has continued to pile up reserves of gold and to maintain full employment. Is the single and all important step from the United States no longer required? Are British reserves now adequate? Is Britain's economy in such good shape that, as some Americans have argued, the level of the reserve is relatively unimportant? Can Britain go it alone? The supreme optimist would answer yes to all these questions. In which case convertibility may be achieved this year.

Agreement on outstanding credits and debts with E.P.U. has already been reached so that the union could be wound up fairly easily; the necessary adjustments to I.M.F. practice will be small and any required addition to its funds will not irk the American taxpayer. The only snag for the supreme optimists is that sterling is seasonally weak in the autumn when the negotiations, if successful, would be complete and it would be most unwise to launch convertibility at such a time.

The Mexican Mining Industry After Devaluation

Mexican devaluation, all government denials to the contrary, has set off an inflationary spiral that will be hard to check, according to our Mexican correspondent writing from Taxco under date June 5. In the mining industry, Mexican miners and metal workers are now asking not only salary increases of 45 per cent (and not the 10 per cent already

granted by the government and certain private enterprises) but also special compensations such as bonuses, premiums, etc., as well as full compliance with all economic benefits established by existing labour contracts.

Leading in the fight for improved conditions is the Miners and Metal Workers' Union, and all benefits are to be retroactive to the date of peso devaluation. The union feels that since mining management income increased when the peso was devalued, through sale of products on the new basis, the miners also should benefit.

Talks between the Department of Labour and Management prior to devaluation, were at stalemate. Now these talks have been suspended so that company representatives can study union demands and come up with counter-proposals. Management, according to reliable sources, will fight anything like the union demands, but might be disposed to grant perhaps a 10 to 15 per cent wage increase generally. With costs of living zooming 50 and more per cent upward an industry walkout may occur this year unless a compromise measure is adopted. But at the time of writing any prospects of peace in Mexico's troubled mining industry are diminishing daily.

The government, in an attempt to stabilize work, is planning to step up exploitation of iron ore reserves. Colima and Michoacan deposits are to be exploited and unemployed miners from other branches of the industry siphoned off to work in new mines. According to the National Department of Economy, Mexico's known ore reserves now total 273,000,000 tons, with coal reserves estimated at 2,890,000,000 tons in two major areas.

The Cerro de Mercado iron deposits in Durango, the Las Truchas area of Michoacan and in the El Mamey region of Colima are the ones being viewed by the government to give a new impetus to Mexican mining activity. Cerro de Mercado is estimated to have at least 75,000,000 tons of ore; Las Truchas, 25,000,000 and 20,000,000 more in Colima.

The current plan is to finance mining operations through federal, state and private investment collaboration in the Durango, Michoacan and Colima iron areas. Without any facilities to utilize iron reserves at present, Mexico plans to export the ore to the United States. However, a foundry on the Pacific coast is in the project stage, as well as another in Durango. Proposals for the Cerro de Mercado steel plant have been received from U.S., Belgian, German and French firms.

Feasibility of the government plan is still uncertain. First, it requires huge outlays of pesos and dollars, and Mexico's commercial trade balances for the first three months of this year have dipped alarmingly. There are technical factors too, for it is unknown whether the Michoacan iron deposits and those in Oaxaca (also estimated at 20,000,000 tons) can be exploited. Engineers are currently studying a plan for harnessing the Balsas River to provide electric power for smelting iron ore from Las Truchas in electric furnaces.

The republic has sufficient coal deposits, with the National Bank of Foreign Commerce estimating deposits in northern coal regions at 1,690,000,000 tons, with the major part of this readily convertible into coke for steel smelting. The second important coal area, Oaxaca, has 1,200,000,000 tons in reserves but possibilities of exploiting this are still subject of official studies.

Mexico's current attempt to stimulate iron mining activity is the result of downward statistics in other metals—silver production is steadily falling off while zinc, lead, copper and other metals are being seriously affected by international quotations. The republic wants a healthy industry and the official hope is that the long dormant iron reserves can provide not only employment for miners but much-needed income to develop a heavy industry internally and

bolster the entire mining picture. In the present state of economic affairs in Mexico the government, much as it would like to do so, is unable to grant official aid to the mining industry.

Anglo American's Contribution to South African Development

It is against a background of past difficulty in raising capital for the post-war development of southern Africa that Sir Ernest Oppenheimer, Chairman of the Anglo American Corporation of South Africa, reviews in his annual statement to shareholders the achievements of an enterprise which since its formation has become more a part of South African life than, perhaps, any company has been to any other country in the world. (See abridged report on page 748.)

It is no doubt time as Sir Ernest says that Southern Africa is still to-day a land of opportunity, but since he came to the Cape more than fifty years ago conditions have changed through the disruption caused by two great wars, which together with political changes have largely terminated the flow of risk capital from private sources.

It is no doubt true as Sir Ernest says that Southern Africa Corporation that in this climate of financial scarcity the great schemes envisaged under their post-war plan have been carried through. There are several reasons for the corporation's success in being able to command large sources of capital, not only for bringing its own enterprises to function, but also for assisting the development of the undertakings of other organizations, the most important of which lies in its highly successful record and the efficiency of its technical direction, which has attracted the confidence of important investors both in the United Kingdom and continental Europe.

From 1946 to the end of 1953 the total of new capital raised in London, and on the Continent by the Anglo American group for its South African and Rhodesian companies amounted to £48,263,000. Of this amount London provided £37,881,000, while the remainder came from continental sources. These impressive figures, however, do not include the enormous amount made available at loans by the British and American Governments for establishing uranium and sulphuric acid plants at a number of gold mines in South Africa. Nor do they include American financial assistance on the Rhodesian copper belt.

These financial achievements, notable though they are, tell only part of the story, and it is a measure of past financial prudence that much capital for the great post-war expansion in South Africa has been provided by the companies of the group themselves. The corporation's seven mines in the O.F.S. have now passed the zenith of their needs for capital, but of £82,321,000 raised by the corporation for this purpose, not a great deal remains unspent.

It is in this context that Sir Ernest Oppenheimer refers to the part played by the De Beers group in assisting the development of the new goldfield. During the prosperous post-war conditions in the diamond markets it had been the policy of this company to accumulate funds to protect themselves against periods of depression. A continuance of prosperity in the diamond trade, however, has made it possible for De Beers to use these funds for short-term investment in South Africa. The extent of the assistance given by this company is impressive, by May, 1954, a total of nearly £50,000,000 had been invested outside the diamond industry, of which over £16,000,000 had been invested in the gold mines of the Orange Free State.

Anglo Americans post-war activity in the development of new gold mines has not been confined to the Orange Free State with which it is particularly identified. It has, also shown itself to be alive to the possibilities of other areas, notably the Klerksdorp field which is becoming increasingly

important both as a gold and uranium producing centre. Near Orkney, where the corporation's Western Reefs mine is in production, the Vaal Reef's property, at present in the process of development, will it is hoped like its neighbour, Western Reefs, be a uranium producer as well as a profitable gold mine. Furthermore, in the same area, the group has assisted very substantially in the financing of the Stilfontein and Ellaton mines, while it has also played a part in providing capital for the two new mines of the Lucas block.

But this is by no means the limit of the corporation's newer activities. In addition to establishing a number of new coal mines in the Union it has recently taken over the management of the vitally important Wankie mines, while on the Copperbelt the new Bancroft mine should be in production within two or three years. The corporation is also closely identified with the programme for the gradual expansion of hydro-electric power resources in Northern Rhodesia and the Congo.

Sir Ernest regards the provision of capital for use in the expansion of industrial activity in South Africa as one of the essential functions of the corporation. While the scope and opportunity for exercising this function varies from year to year, he says that during the months which have elapsed since the end of 1953 the corporation has been more than normally active in arranging important financial contacts in this sphere. Indeed, he looks forward to a period of great and growing prosperity and there is no doubt that with the financial outlook for South Africa "set fair" there is no organization better placed to take advantage of future opportunities.

Canada

(From Our Own Correspondent)

Sudbury, May 29.

The value of primary metals exported from Canada during the first four months of 1954 has declined more than 10 per cent as compared with the corresponding period of the preceding year. Slow demand and lower prices for zinc, lead, and copper have contributed chiefly to the decline. The value of zinc exports has suffered a decline of some 40 per cent; the value of lead exports down some 35 per cent and the value of copper exports down nearly 20 per cent. On the other hand, nickel continues in good demand and with a 10 per cent increase in the value of nickel exports to a current rate of close to \$15,000,000 monthly. Platinum exports continue with little change, while exports of silver have increased some 10 per cent.

PICTURE OF GENERAL EXPANSION

Brunswick Mining and Smelting Corporation is proceeding with plans designed to establish in the province of New Brunswick one of the major mining enterprises in Canada. A 14-mile highway has been completed to the centre of activity at a cost of some \$500,000. The power transmission line has been completed to the site of the initial mining plant. There are two main ore bodies containing an estimated 50,000,000 tons of ore as so far explored to 1,000 ft. in depth. The zinc content is 5.25 per cent, lead 1.80 per cent, copper .50 per cent, and silver 1.76 oz. The initial shaft is down 75 ft. and will be carried to 400 ft. with working levels at 200 ft. and 350 ft. depths. Construction of a test mill of 150 tons daily capacity is expected to commence about the middle of June and be ready for operation early in 1955. This pilot plant is to provide a key to the design of reduction works ultimately required. Preliminary estimates suggest that as soon as tests are completed in the pilot mill, a new plant of upwards of 4,000 tons daily will be designed, and with still further expansion envisaged accordingly as the overall plan of development unfolds.

There is considerable promise of further extension of the petroleum fields of the province of Alberta. This is revealed in the Sturgeon Lake area of the Peace River district some 200 miles north-west of Edmonton. A second drill has penetrated the favourable zone at a depth of 8,400 ft. and is unofficially reported to compare favourably with the first well which cut through 209 ft. of petroleum structure.

The Canadian government, in an effort to keep pace with the steadily expanding mining industry, is placing 86 survey parties in the field this season, distributed across the northerly reaches of the various provinces as well as the Northwest Territories and the Yukon.

Consolidated Mining and Smelting Co. is handling 11,000 tons of ore daily from the company's Sullivan Mine in British Columbia. The company employs close to 8,000 men in its overall operations, including hydro-electric power plants of its own which generate 400,000 h.p. and nearly all of which power is used in the company's own operations.

Information this week from Washington strongly suggests that the U.S. government is about to introduce a new stockpiling programme of key metals which will include lead and zinc. The revised long range plan offers promise of stronger demand and higher prices for both metals and could signalize greater stability in the entire base metal mining industry for considerable time to come.

Canada's iron ore shipments for 1954 promise to rise above 6,000,000 tons, bringing the country to the position of eighth among the iron producing nations of the world. The indicated consumption of iron ore in Canada for 1954 has been estimated at some 5,200,000 tons.

PROSPECT OF LITHIUM PRODUCTION

Prospects are promising that lithium may be added to the list of minerals produced in Canada. Quebec Lithium Corporation, controlled by Sullivan Con. Mines, has completed about 30,000 ft. of diamond drilling on property situated some 25 miles north of Val d'Or in Quebec and has indicated 3,000,000 tons of ore containing 1.11 per cent lithia. The spodumene occurs in dykes of pegmatite.

The House of Commons at Ottawa has passed bills authorizing the Canadian National Railway to construct two new railway lines, one to serve the new Manitouwadge mining area in Ontario, and the other the Chibougamau field in Quebec. Total new construction will exceed 320 miles and involve an estimated cost of \$38,000,000.

Sherritt-Gordon Mines is nearing full production at its new nickel-copper mine at Lynn Lake in northern Manitoba. The plant is treating close to 2,000 tons daily at present and offers promise of attaining a rate of 2,300 tons per day. Recovery of nickel is exceeding 87 per cent while copper recovery is close to 94 per cent.

ACTIVE PETROLEUM EXPLORATION

Indications of petroleum along both shores of the St. Lawrence River between Montreal and Quebec has encouraged the Imperial Oil Co. to apply to the Canadian government for rights to carry on a campaign of drilling in that area.

Petroleum reserves in Canada are closely approaching 3,000,000,000 bbl. Current production of petroleum in this country is approximately 7,000,000 bbl. per month.

A new uranium discovery of considerable promise has been made in northern Ontario at a point about 40 miles north from the nickel-copper mining fields of Sudbury. The staff representative of *The Mining Journal* visited the discovery where preliminary assays suggest ore of commercial grade across a width of more than 100 ft. One of the gold-producing companies of northern Ontario is negotiating at present for purchase of the property and an official announcement is promised soon.

A Survey of Australian Minerals and Metals in 1953 and 1954

By Dr. J. A. DUNN

This article, written by Dr. J. A. Dunn at the beginning of May, while concerned primarily with the recent record of and immediate outlook for the Australian mineral industry, is written in the context of world markets. Much of what the author says about 1953 will be familiar to readers who have already found time to peruse *The Mining Journal Annual Review*, but this article will nevertheless be of interest not only as a convenient record but also for its appraisal of market prospects from a strictly Australian standpoint. What follows is a condensation of the complete article published in *The Australian Mineral Industry, Quarterly Review*, Vol. 6, No. 4. The author is chief mineral economist of the Bureau of Mineral Resources, Australia.

As far as can be judged at present 1954 is likely to average out much the same as 1953 for the world mineral industry, with perhaps a slight increase in real consumption. Prices for lead are likely to average about the same as in 1953, for zinc somewhat higher, for copper rather lower, and for tin an unknown level dependent on the ratification of the International Tin Agreement. The manner of operation of the new U.S. stockpiling programme and the extent of U.S. import duties on lead and zinc may affect this forecast.

In Australia controls were removed early in the year on the base metals, except copper. Price control on copper, continued as a protection to local producers in view of the fall in price overseas, was possible because of the accumulated funds in the Copper Pool. The cost difficulties of the tin and copper producers were subjects of Tariff Board enquiries early in 1954, the results of which are awaited.

Although there was a general lift in tonnage production and exports in the Australian mineral industry, lower prices have meant a downturn in the total values of the mineral production and of exports from the peaks of 1952.

An important event in the Australian Mineral Industry was the finding of oil in the first borehole put down on Rough Range, Exmouth Gulf, in Western Australia. Of high wax content, it would appear to be a residual oil, but raises optimism of obtaining payable oil in that area.

The search for oil and uranium in recent months has given a stimulus to mineral exploration in Australia. However, intensity of exploration here lags far behind that in Canada where many millions of dollars so spent annually are regarded in the same manner as a gamble on horse-racing or lotteries; one might speculate on the vast development which would take place in Australia if only part of the financial interest in these locally characteristic pastimes (about £250,000,000 turnover annually, excluding S.P. betting) could be diverted to exploration in the same spirit as in Canada.

GOLD EXCEEDS 1,000,000 OZ.

The Australian mine production of gold increased to 1,075,080 oz. in 1953, the first time it exceeded 1,000,000 oz. since 1942.

World gold production was about the same as in 1952, 26,500,000 oz. excluding Russian production. The free market intake dropped from an estimated 12,000,000 oz. in 1952 to 7,000,000 in 1953; this and the entry of Russian gold on the market at the end of the year, and the virtual abandonment of hope that U.S. would lift the dollar price above \$35, led to the disappearance of the gold premium by November, when overseas sales of Australian gold ceased. The average premium from sales by the Australian Gold Producers' Association during the year was 11s. 8d. per f.oz.

With increase in costs and the loss of the gold premium, the financial position of most of the larger gold producers is back to where it was before devaluation in 1949; several mines are in an even worse position. To avoid the probable closing down of several important mines, the industry has approached the Commonwealth Government for a subsidy. In the meantime, producers will tend to increase grade and tonnage of ore mined in an effort to reduce costs, and it is not improbable that production in 1954 will exceed 1,100,000 oz., approaching the 1942 figure. The recent increase of 2s. 8d. per oz. in the price paid by the Commonwealth Bank to producers will be of little help.

THE LEAD-ZINC INDUSTRY

In 1953 recoverable mine production of lead was higher, at 258,200 tons, as also was refined lead at 172,468 tons, but lead bullion was lower at 34,290 tons. Exports of refined lead and bullion attained a new peak of 148,433 tons and 42,339 respectively. Exports of recoverable lead in concentrate were 34,700 tons. The total value of exports declined because of lower prices overseas, to £25,257,119.

Recoverable mine and refinery production of zinc were higher at 200,800 tons and 90,178 tons respectively. Exports of zinc declined to 36,938, but concentrates increased to 233,309 tons (about 104,500 tons recoverable metal). The total value of exports of refined zinc and concentrates at £9,027,951, is less than half the 1952 figure.

Increased production of lead and zinc has helped to offset to some extent the fall in prices of these metals. The London Metal Exchange price of lead ranged between £74 and £103 3s., but mainly in the £90's; g.o.b. zinc opened the year at £96 ranging down to £63 12s. 6d., but mainly in the £70's. The Australian prices were the f.o.b. equivalents, Port Pirie and Risdon.

Australian production of lead and zinc in 1954 should not be lower than last year; it is likely that total production of each will increase to some extent.

INCREASED COPPER PRODUCTION

Australian recoverable mine production of copper in 1953 was 35,900 tons; of blister copper 35,293 tons; and of domestic refined copper 14,679 tons. The great increase in copper production came mainly from Mt. Isa, Queensland, where the new smelter commenced operations in February.

Because of heavy stocks due to earlier import contracts, it became difficult to market all the new copper produced during the year; exports were permitted, particularly of blister from Mt. Isa and some from Mt. Morgan. Excess stocks have now been marketed, but blister production is now far ahead of electrolytic refining capacity. Much of Mt. Isa blister is being exported overseas for refining on toll for the present. If it is established, as seems likely, that Mt. Isa blister can be fire-refined up to acceptable standards,

there should be no technical difficulty in treating the full production in Australia. In the meantime, however, experience has shown that Australian blister can be sent overseas for treatment on toll and return at a lower cost than its electrolytic treatment here.

The Tariff Board enquiry on the copper-producing industry was completed in March, 1954; the Board's report is awaited. It is clear that at a domestic price of £300 a ton at least one major producer will be unprofitable.

Production in 1954 is likely to be of the order of 38,000 tons copper. It is now apparent that manufacturers' estimates in recent years of domestic demands of primary copper, ranging up to 60,000 tons, were greatly overestimated, and consumption has not yet exceeded 43,000 tons. Unless there is a great expansion in development projects in the next few years, consumption will continue in the 40,000-50,000 tons range. Relatively small imports will continue to be required.

TARIFF PROTECTION SOUGHT FOR TIN

Production of refined tin in 1953 declined to 1,443 tons, lower than the previous nadir in 1951. The reduction was due mainly to Tableland Tin dredge being out of production until November whilst being moved to the new dredging site. There was also a small loss in production by low-grade high-cost producers closing down after prices fell in mid-year.

When the London Metal Exchange price of tin declined from £950-960 to around £700 early in the year, control of the price of tin in Australia, which had been maintained at £A1,100 a ton to producers in the previous 12 months, was lifted. Domestic producers were paid on the basis of Singapore prices less smelting and other charges, which gave them a net return lower than Malayan producers were receiving. Small producers who had taken up low grade properties during the period of abnormal prices were unable to continue production, and the industry applied for tariff protection. The report of the Tariff Board enquiry is awaited.

Although prices have since recovered somewhat, world over-production will lead to widely fluctuating prices unless the International Tin Agreement drawn up at the end of 1953, is ratified. The chances of its signature by the closing date, June 30, 1954, by the minimum of nine consuming countries, despite probable acceptance by sufficient producing countries, are not bright.

Production of tin in Australia during 1954 is likely to be of the order of 2,000 tons, and consumption which had fallen to below 2,000 tons in 1953, is likely to recover to its normal level of around 2,300 tons, requiring small imports.

EXPANDING APPLICATIONS OF TUNGSTEN

Australian production of wolfram and scheelite in 1953 increased above the previous year's record to 2,101 tons of 65 per cent WO₃ concentrates.

When the British Ministry of Supply withdrew its ore-buying prices early in 1953, several small Australian mines which had been opened up during the period of high prices were unable to continue operations at the greatly reduced price. The open market price declined from above 300s. a unit at the beginning of the year to 165s. at the close. It declined further to 100s. early in 1954, but has since recovered. The greatly expanding use of machine tools in industry should remove much of the former pessimism of reasonable-cost tungsten producers in peacetime.

Production of the larger producers in Australia, who hold contracts with the U.K. and U.S. Governments will not be seriously affected by these reduced prices until their contracts run out in two-four years.

DELAY ON BIG BELL ALUMINIUM SMELTER

Although construction of the Bell Bay aluminium smelter neared completion, commencement of operations was further delayed by unexpected difficulties in the Trevallyn hydro-electric scheme, particularly in the tunnel. Production of alumina is now expected to commence in January, 1955, and of metal some months later. Initial output will be 10,000 tons of metal per annum, rising to 13,000 tons at such times as the necessary further power becomes available.

The world output of aluminium rose to 2,500,000 tons in 1953, of which the U.S.A. produced 1,100,000 tons and Canada 500,000 tons. The Aluminium Company of Canada has announced that its Kitimat project will commence in mid-1954 with an initial production rate of 82,500 tons annually.

U.K. prices remained fairly stationary in 1953. The price was raised to £156 per ton on January 1, 1954, after dropping from £161 per ton to £150 on the resumption of private trading.

The Australian price is governed by the Canadian price and remained at £210 per ton for the greater part of the year.

PRICE SLUMP FOR RUTILE AND ZIRCON

Production of these two minerals at 39,000 tons and 29,800 tons respectively was similar to that of 1952, but prices on offer for both commodities slumped sharply. Sales of rutile were recorded down to £30 per ton f.o.b. Brisbane, whilst zircon was sold down to £8 per ton. Notwithstanding this sharp decline in prices several producers selling on a contract basis received in the vicinity of £40 per ton and £10 per ton respectively.

At these reduced prices, brought about by the disposal of excess consumer stocks built up in previous years, demand has remained firm and the early months of 1954 saw signs of a recovery, and rutile was sought at £38-£40.

In recent months considerable concern has been shown, particularly in the United States, at the comparatively slow progress made in titanium metal production, in 1953 metal production in the U.S. was only 2,000 tons. Metal production will be greatly expanded in the next few years and the U.S. Government has authorized contracts for 37,500 tons in 1956. Precise information is lacking whether Australian rutile is being used for production of titanium metal, but recent enquiries seem to confirm this. Whilst production of titanium metal is based on rutile the demand for Australian concentrates seems assured. Research being carried out on the use of ilmenite and of titanium slag as the basic raw materials could alter the picture.

IRON, STEEL AND COAL

In 1953 output of steel increased by nearly 25 per cent to 2,049,237 tons. Australian black coal production fell by 1,000,000 tons to 18,400,000 tons in 1953, but output was still in excess of the annual domestic consumption.

Exports of coal from Australia rose from 177,000 tons in 1952 to 377,000 tons in 1953, an increase of 113 per cent. Approximately 172,000 tons were exported to New Caledonia and 116,000 tons to Korea. Imports fell from 272,000 tons in 1952 to 22,000 tons in 1953.

The output of brown coal in Victoria rose by 153,500 tons to 8,257,300 tons in 1953. The output from the main S.E.C. open cut rose by 27,200 tons to the record figure of 6,474,900 tons and a record output of 1,242,418 tons was achieved at the Yallourn North open cut. Five private companies operated brown coal mines during the year, their output of 539,981 tons was much the same as in 1952.

Magnesite Production in Yugoslavia

According to known deposits and the reserves discovered during prospecting operations, Yugoslavia's potentialities as a magnesite producer may be regarded as considerable, even when compared with the outputs of established producers elsewhere in the world. The following article, condensed from *Commercial Information*, Vol. 7, No. 4, a monthly publication issued by the Yugoslav Federal Chamber of Commerce, describes the geological formation of the magnesite deposits of the country and discusses methods of treatment used in processing the raw material.

The principal magnesite deposits of Yugoslavia are located in the serpentine belt which extends the length of the country, running parallel with the Adriatic from the Una river through Central Bosnia, Western Serbia and Macedonia to the frontier of Greece. These deposits consist of amorphous magnesite which is distinguished for its exceptionally white colour, its minimum iron oxide content and its relatively high content of magnesium oxide. The Yugoslavia crude magnesite has approximately the following composition:

Mg 46-49 per cent. SiO_2 1 per cent. Fe_2O_3 and Al_2O_3 .1-.3 per cent. CaO 1.52 per cent.

The increase in domestic consumption and exports has resulted in an increased production of crude magnesite. In 1939 production amounted to 32,887 tons, in 1949 it had risen to 51,721 tons and last year had more than doubled to stand at 122,517 tons. The crude product is exported chiefly to Italy, Holland, Japan and the United Kingdom.

THE CALCINED PRODUCT

Depending on the purpose for which it is to be utilized, the magnesite is calcined at varying temperatures, and in consequence the calcined magnesite has different chemical and physical properties. When the pure product is calcined at temperatures ranging from 800 deg. C. to 1,000 deg. C. it yields caustic calcined magnesite, yellow-brown in colour, which is very fragile and easily ground to fine powder.

In view of the fact that the deposits of Yugoslavia contain pure magnesite which requires no special refining, the calcining equipment necessary for lower temperature operation is located at the mines themselves. Caustic calcined magnesite is produced at the Sumadija, Brdani, Goles and Magura mines. Originally the Yugoslav caustically calcined magnesite was exported to the world market through the intermediary of Greece and was sold as Greek magnesite. Increased production, however, and the potential capacity existing under the conditions created by expanding trade between Yugoslavia and western European markets in particular, have resulted in the magnesite being sold to these markets as a Yugoslav product.

The general development of Yugoslav industry resulted in the development of the production of caustic magnesite, a rise perhaps best illustrated by the fact that in 1921 some 1,520 tons of caustic were produced—an output that has risen to 18,087 tons last year. Almost the entire production of caustic calcined magnesite is exported. These exports amounted to 16,073 tons in 1950, 19,082 in 1951, and 21,161 tons in 1953, this latter figure being the latest available from official Yugoslav sources but not the final figure for the year. The exported tonnages were shipped chiefly to the United Kingdom, Western Germany, Holland, Italy, Finland, France, the United States, Sweden and Switzerland.

WIDE APPLICATIONS

Caustic calcined magnesite has wide applications, and more than one hundred patents for its use exist in all branches of industry. The material is used in the manufacture of cement and as a flooring substitute as well as in the prefabricated housing industry. Caustic calcined magnesite also finds a wide application in the chemical industry

for the production of bitter salts and other magnesium compounds, and in the paper and rubber industries as a filament.

One of its most important fields of application is in the mining industry, where it is used as a cement of high cohesive speed in the prevention of water leakage. Caustic calcined magnesite is also used in the production of magnesium metal.

In view of its minimum metallic oxide content, Yugoslav caustic calcined magnesite is suitable for the industries mentioned. Its analysis shows the following results:

MgO 86-90 per cent, CaO .03-.05 per cent, SiO_2 4-5 per cent, Fe_2O_3 .16-.24 per cent. Heating loss 4.6-4.7 per cent. The following guarantees are extended on shipment; MgO 86-88 per cent, CaO 2-2.5 per cent, maximum and SiO_2 maximum 5 per cent.

THE SINTER PRODUCT

Sintered magnesite is obtained by prolonged heating at approximately 1,500 deg. C. The sinter product is an excellent base refractory substance, and finds applications in all foundry processes where high temperatures and base padding are required. In addition, sinter magnesite is used as a raw material in the production of base refractory bricks. Yugoslavia's wealth in magnesite deposits has laid the foundation of the development of the base refractory industry built up during the post-war years at Rankovicevo. This factory is modern in equipment and design, and began operation in 1952. During 1953 the first shipments of sinter magnesite were made to Western Germany, and this year these exports will be extended to Western Germany as well as to other countries of Europe.

The sinter magnesite produced in Yugoslavia is obtained from amorphous magnesite, so that the resultant sinter product is likewise light in colour with a minimum content of metallic oxides. The following is the analysis result:

MgO minimum 92 per cent, CaO maximum 1.75 per cent, SiO_2 maximum 5 per cent, R_2O_3 1.2-2 per cent, heating loss .25 per cent, specific gravity minimum 3.5 per cent, porosity maximum 10 per cent, granulation 0-20 mm.

PRODUCTION RANGE

As Yugoslavia processes large chrome ore deposits which are also used in the production of refractories, alone or in combination with magnesite, the production range of the Rankovicevo factory likewise includes chromite and chrome-magnesite refractories. The magnesite deposits—and the industry itself—are situated along the Beograd-Rankovicevo-Skoplje railway, and thus there are excellent connections with the port of Salonica and, by way of Belgrade, with the ports of the Adriatic coast. Upon the completion of the Belgrade-Bar railway line the magnesite products will only have a short distance to cover to reach the outlet of the Adriatic ports. The immediate vicinity of Belgrade facilitates the use of cheap river transportation for those shipments made to Central and Western European consumers. All these lines of communication enable rapid shipment to be made to places connected by regular liner service with the countries of the Mediterranean and Western Europe, as well as those farther afield.

Stratametric Survey of Boreholes

The necessity of ascertaining the direction of the trend of deep gold-bearing beds was early realized during active drilling in the Klerksdorp area of South Africa, and the following article, condensed from *Optima*, Vol. 4, No. 2, a quarterly review published by the Anglo American Corporation of South Africa, explains how the system of stratametric surveying was evolved and used with markedly successful results in the area.

Soon after active drilling was started in the Klerksdorp area, it became apparent that a considerable amount of work might be saved if it were possible to ascertain the direction of the trend of the deep gold-bearing beds.

At that stage, the drills were penetrating virgin country many miles away from any known rock outcrop of the Witwatersrand Series. Almost the only clue to the trend of the beds was afforded by the well-known tendency of any borehole to wander away from the perpendicular in a direction roughly opposed to the dip of the bedding planes.

But, for several reasons, reliable deductions could not be made from the tendency of a borehole to deviate from the perpendicular. For instance, the deviation of a borehole does not follow an invariable rule: some holes show little deviation. Furthermore, the gold-bearing beds may lie beneath a thick cover of rocks deposited more recently, and these rocks may introduce an additional degree of deviation; and inconsistent deviations are likely to arise owing to the existence of faults and other geological disturbances.

Several attempts were made to establish the correct orientation of the core extracted from a borehole. The results were either unreliable or unsatisfactory.

During the earlier part of the drilling programme on the property of the Western Reefs Exploration and Development Company Limited, a technique that gave fully reliable results was developed. This method is known as "stratametric survey."

Briefly, the principle of stratametric survey is as follows. A line is scribed in the rock at the bottom of the borehole, and a photograph is taken (by means of a special survey unit) showing the position of the line in relation to a compass dial. The photograph also records the deflection of the borehole from the vertical position represented by a plumb-line. Drilling is resumed, and the marked piece of core is removed. Using the information in the photographic record, it is then possible to set up the piece of core in an interpreting device in a position similar to that in which the rock was found. The trend and angle of the orebody running through the core can then be measured.

In the practical application of this method, it is first necessary to grind a flat surface at the bottom of the borehole by means of a flat-faced diamond-set crown bit. Water flows through ducts in the bit to wash away debris.

The next step is to remove the crown bit and connect to the drill rods a scribe, automatic pump and survey unit; this assembly is lowered to the bottom of the hole.

The scribe, illustrated top left, consists of a hinged finger, in which is set a diamond. The finger operates against a powerful spring. When the rods are lowered to the bottom of the hole, their weight forces the diamond point of the scribe to move across the rock, thereby deeply etching a groove from a point near the centre to the rim of the hole. The rods are then raised a few inches to allow the automatic pump to flush the face of the rock with water, and the rods are again lowered to ensure a well-etched groove.

The assembly is then allowed to rest on the bottom of the hole for some time to allow a compass needle, contained in the survey unit, to come to rest and a timing device to operate the exposure of the photographic record.

The survey unit shown top right consists, essentially, of a small electric lamp, a diaphragm, a plumb-line, a compass needle, a graduated compass card made of transparent material and a disc of sensitized paper. The light from the lamp passes through the diaphragm, and throws the shadows of the plumb-bob, the compass needle and the graduated compass card on to the sensitized paper.

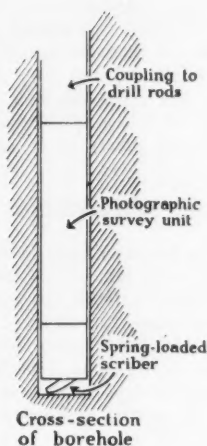
This simple photographic record gives much information. The shadow of the compass needle shows the orientation of the groove in the rock in relation to magnetic north;

and the shadow of the plumb-bob shows the number of degrees by which the borehole has deviated from a vertical position and the direction of that deviation.

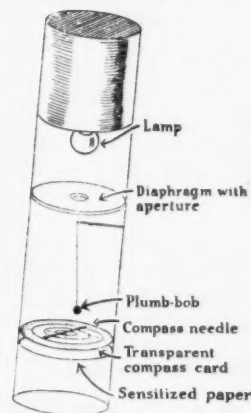
When the survey unit has had time to complete its operations, ordinary drilling is resumed. The core is extracted and fitted together, and the more prominent bedding planes are noted and intensified with crayon where necessary.

The piece of core is placed in an interpreting device, known as a three-dimensional goniometer. It is clamped in the holder of the instrument, and, with the help of the photographic record, it is set up in a position exactly the same as that occupied originally in the ground. The direction of the run of the reef and its dip can then be read off.

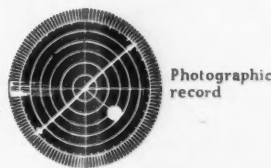
Many points so investigated from boreholes thousands of feet in depth have since been actually intersected from the workings at the Western Reefs mine. They have shown that the results of the survey were surprisingly accurate.



Cross-section of borehole



Simplified diagram of photographic survey unit



Photographic record

Equipment used in stratametric survey

Use of Air in Rotary Bit Drilling

Although water or drilling mud has been the standard drilling fluid used in oil well drilling until approximately four years ago, experiments concluded since 1950 substituting air for water in quarry drilling showed that this medium, together with modified bit structure, promoted increased bit and bearing life as well as higher drilling footage rates. The following article is the condensation of a paper by H. B. Woods, assistant director of research engineering, Hughes Tool Company, United States, which was presented at the drilling symposium held during October, 1953, at the University of Minnesota. The factors affecting effective rotary bit drilling in mines and quarries with reference to oil wells are discussed, and the conclusions drawn from past experiences show that amended oil well methods are of benefit to drilling operations in mines and quarries.

In rotary drilling a bit is attached to the lower end of a hollow tubular member which extends from the top of the hole to the bottom. The hollow tubular member, called the drill stem, is rotated, weight is applied to the bit by letting all or part of the weight of the drill stem rest on the bit, or, in the case of a shallow hole, by pushing down on the upper end of the drill stem.

A fluid is pumped down the hollow drill stem through ports in the bit. This fluid then rises up the annular space between the wall of the hole and the outside of the drill stem, bringing the rock cuttings to the surface. A schematic drawing of such a system where air is used as the flushing fluid is shown on this page. If mud were used it would be recirculated after removal of the cuttings by screening or allowing them to settle out.

There are three general types of bits used in the rotary method: first, the blade or scraping type bit commonly called a fishtail bit or drag bit; second, the diamond bit; and third, the rolling cutter rock bit.

THE ROLLING CUTTER ROCK BIT

A typical rock bit is a tricone rock bit, the three conical cutters of which are rotatably mounted on journals with a combination of ball, roller and plain bearings. A typical bearing structure is illustrated, and it may be noted that the rows of teeth on one cone fit in the groove between rows of teeth on adjacent cones. The cones are in no way geared together. Each cone rotates due to the fact that its teeth are geared to the bottom of the hole.

Most of the drilling done by a rock bit is by a crushing action. The cones roll on the formation and the unit pressure between the teeth and the rock is high enough to locally exceed the compressive strength of the rock. Because of the conical shape of the cutters there is almost a true rolling motion between the cones and the bottom of the hole. There is then a maximum of crushing action and a minimum of scrape and the bit drills because of the higher compressive strength of the steel as compared to the rock even though the scratch hardness of the steel may be lower than that of the rock. In another type of tricone bit the cutting elements are ball ended inserts of tungsten carbide set into the cone surface. This bit is designed for the very hardest, strongest and most abrasive formations.

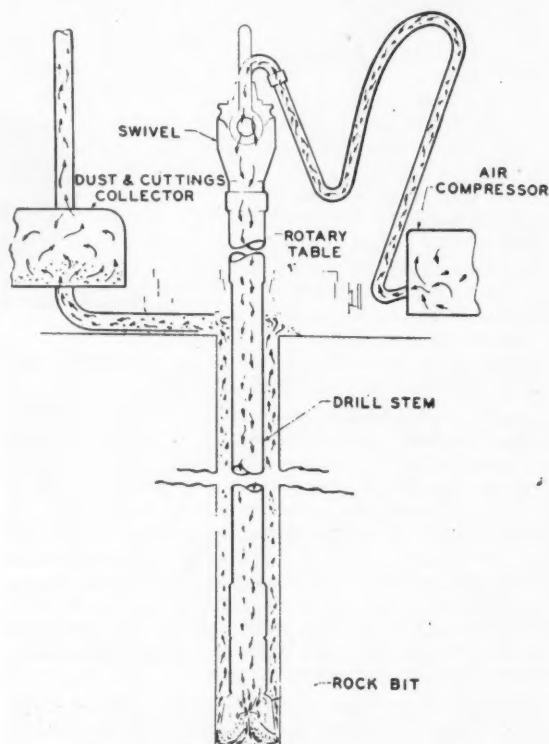
STANDARD DRILLING FLUID

Water or drilling mud has always been the standard drilling fluid for oil well use and up until about four years ago water was the standard drilling fluid in mines and quarries. In 1949 and 1950 extensive experiments were conducted in which air was substituted for water in quarry drilling. It was found that if the bit structure was modified such that a certain percentage of the air passed into the bearings of the bit then bearing life was considerably higher. Also drilling rates and footage obtained per bit increased. At the present time, air is the standard drilling fluid for rotary rock bit drilling when used in quarries and mines. Following successful application of air in the quarries and mines a number of oil field operators have experimented with the use of air

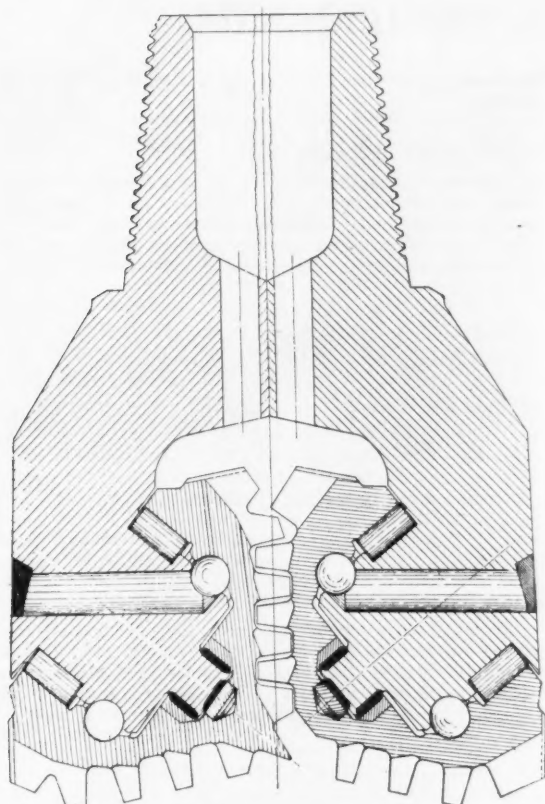
or natural gas as the flushing fluid in deep wells. In the gas field in the San Juan basin of New Mexico, natural gas is regularly used in the drilling-in operation. Operators have found that drilling rates and bit footages are sometimes three or four times what they were when mud was used. One well in West Texas was drilled to a depth below 9,000 ft. using natural gas as the flushing fluid with a great saving in bits and time over what had been obtained in adjacent wells when drilling mud was used. A disadvantage of its use in an oil well is that, if subsurface liquids are encountered, their entry into the well bore may cause the formation cuttings to adhere to the well bore and drill stem, resulting in a stuck string of tools. This problem has not proved serious in mining or quarry operations.

INCREASED DRILLING PERFORMANCE WITH AIR

The increased rate in surface holes may be due to the more rapid removal of cuttings with air, to the higher coefficient of friction between the cutter tooth and dry rock as compared to wet rock, and to the easier removal of a chip that has cracked from the parent rock but is still in place. In trying to explain why more improvement is obtained in deep holes than in shallow holes the possibility was considered that hydrostatic pressure has an effect on drill-



Rotary drilling with air as flushing fluid



A typical bearing structure

ability. The literature was reviewed and it was found that many people have studied the properties of rocks under high pressure. Professors P. W. Bridgeman and Frances Birch at Harvard University have done a lot of work on this in recent years. They found that many materials, normally brittle at atmospheric pressure, become much stronger and ductile at high hydrostatic pressures. For example, a marble with a normal compressive strength of 30,000 lb. p.s.i. had a compressive strength three times as high when tested under a hydrostatic pressure of 120,000 p.s.i. and it did not fail with the typical brittle failure expected but squeezed out just like a block of lead.

EFFECTIVE ROCK PRESSURES

The actual pressures concerned with this article are much lower than this. For example, in a 10,000 ft. well the pressure on the bottom of the hole is the pressure exerted by the mud column above it which is about $\frac{1}{2}$ lb. per ft. of depth or about 5,000 p.s.i. The pressure in the rock a short distance away from the bottom of the hole is due to the overburden of formation above it and is about 1 lb. per ft. of depth or 10,000 p.s.i. The effective pressure in the rock being drilled is therefore something between 5,000 p.s.i. and 10,000 p.s.i.

The drilling rate of a rock bit depends on the weight per inch of bit diameter. It might be thought that it would depend on the weight per unit area of the hole but this is not so. For example, a 6 in. bit with 6,000 lb. on it will drill at approximately the same rate as a 12 in. bit with 12,000 lb. on it.

For the most efficient drilling of the hardest rocks, weights in the range of 4,000 to 6,000 lb. per in. of bit diameter are

required. Drilling rate is more or less directly proportional to rotary speed such that if rotary speed is doubled, drilling rate will be approximately doubled. However, this is not the whole story because an increase in rotary speed increases the wear on the cutting structure out of proportion to the increase in drilling rate. Also an excessive rotary speed may shorten bearing life unproportionally. Determining the proper rotary speed depends upon the abrasiveness and the hardness of the formation and for highest efficiency must be experimentally determined in any particular type of drilling. As a general rule, however, most efficient drilling will be obtained in the hardest, most abrasive formations with low rotary speeds, say 30 to 50 r.p.m. and in the softest formation at higher rotary speeds, say 75 to 125 a.p.m.

Rotary rock bits are made in sizes $3\frac{1}{4}$ in. and larger. The bearings in the smaller sizes are less rugged in comparison with larger bits and will not stand extremely high drilling weights. The teeth on the cones are much shorter than on larger size bits so that even if the bearings in the smaller bits would stand the load, the total hole drilled by the smaller bits would be much less than that made by larger bits. The smaller sizes may be used satisfactorily in drilling soft formations where light weights may be applied. Considering rock bit efficiency alone, it would be inefficient to drill a hole with rotary rock bits in hard rock any smaller than 6 in. in dia. Probably the lower limit for hole size for most efficient drilling in the very hardest rock is around $7\frac{1}{4}$ in.

REMOVAL OF CUTTINGS

The amount of air required for efficient removal of cuttings depends on the rate of drilling and on the specific gravity of the rock being drilled. Where high drilling rates are maintained more air is required. A good rule is to use enough air to maintain a rising velocity in the annulus of 3,000 linear ft. per min. This may be somewhat more air than is actually required for slow drilling in formations with low specific gravity but would definitely be needed where drilling rates are higher than 50 ft./hr. or in any case where the specific gravity of the material being drilled is above 3.5.

There are rotary drilling machines used in quarries, open pit and strip lines ranging in type from light truck mounted drills capable of applying 8,000-10,000 lb. weight on the bit to heavy cat mounted drills capable of applying up to 60,000 lb. on the bit.

There are now well over 200 air drills using rotary rock bits in mines and quarries in the United States. As far as is known, four years ago there were none, and this fact is evidence of the acceptance of rotary rock bits for air drills in industry. In most cases air rotary rock bit drilling has resulted in a substantial reduction in drilling costs.

CONCLUSIONS

Six major conclusions may be drawn from any considerations of the uses of rotary rock bit air drilling. First, rotary rock bits require heavy loads for efficient drilling in hard rock. Second, the highest drilling efficiency is obtained with bits larger than 6 in. in dia. and third, air is the most efficient drilling fluid known for rotary rock bits. Indeed, the fourth conclusion is drawn from the fact that the relative efficiency of air over water or mud increases as hole depth increases.

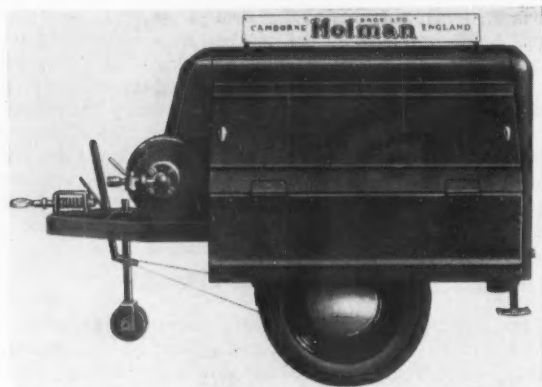
Other conclusions are that drilling machines are now available for developing the full potentialities of air rotary rock bit drilling in mines and quarries, and that many operatives have found that their drilling costs have been substantially reduced by changing over from their previous method of drilling to air drilling with rotary rock bits.

MACHINERY AND EQUIPMENT

A Lightweight Air Compressor

A lightweight single tool portable air compressor, completely air-cooled and driven by petrol or diesel motivation, has been added to the range of Holman portable compressors. Designated Holman AT8, the single cylinder two-stage unit is equipped with Duplex piston, and b.p. compression above and h.p. below. The unit is powered by an Enfield twin-cylinder air-cooled engine developing 18 b.h.p. at 1,800 r.p.m. The unit is assembled on a fabricated steel chassis to which two large pneumatic tyre wheels are independently spring mounted.

Leading particulars show that free air at 100 lb. p.s.i. is delivered at 68 c.f.p.m. and that maximum continuous air pressure is 125 lb. p.s.i. The unit is 7 ft. 1 in. long, 4 ft. 4 in. wide and 4 ft. high. The diesel unit weighs 1,680 lb. and the



The AT8 portable air compressor

petrol 1,660 lb. Fuel tank capacity is 6½ gals. As the normal output is delivered well below the maximum revolutions obtainable, long life and ample power reserve are ensured.

Conveyor Belts in Open-cast Mining

In our issue of May 28, 1954, a note in this column described a super-strong conveyor belt material which had been announced by the United States Rubber Company and which made it possible to haul underground thousands of tons of coal per hour on one continuous belt for three miles. Further information on the subject of conveyor belts in the mining industry reveals that marathon-long conveyor belts are speeding up the process of open-cast mining. One of the longest of these was recently installed by B. F. Goodrich, Ohio, and is used to transport coal from the strip mine to the Ohio Power Company.

This four-and-a-half mile belt transports 800 tons of coal an hour. On its route it bridges county roads, spans one big State highway, and crosses a 500-foot river.

The conveyor system consists of fourteen sections of rubber belting, each belt being 36 in. wide, and the length varying from 500 to 2,964 ft. The belt carries coal at 600 ft. a minute.

Cyclone Paddle Blade Centrifugal Fans

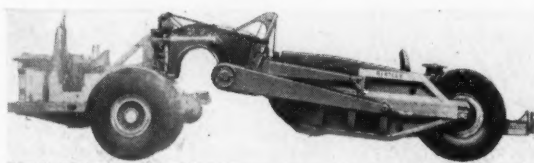
One of the many problems which arise in the manufacture of centrifugal fans is the question of rotation and the direction of air discharge. Predetermined rotation and angle of discharge are sometimes subjected to alteration owing to changed site conditions, or for some other reason. In order to overcome these difficulties, Matthews and Yates, Ltd., have designed and patented the Cyclone Series 4D Fan.

The new fan is available in eleven sizes from No. 4 to No. 14 and to effect the change of discharge direction and/or rotation on site, it is equipped with a symmetrical casing and interchangeable side cover plates. The interchangeable cover plates enable the fans to be built with either rotation and the four-

sided casing gives four alternate angles of discharge with each rotation.

A New Design of Scraper

In the opening days of May the first of a new line of Birtley scraper was successfully tested and delivered to Shellabear Price for immediate commissioning at the Spade Mill Reservoir Site, Preston, where a national demonstration of the D.W. tractors and the scraper, designated No. 21, was arranged for four



The No. 21 Scraper

days, May 18 to 21. A representative of *The Mining Journal* attended this demonstration given by the Birtley Co. Ltd., when two equipments of Birtley manufacture were on show, together with three of American built equipments.

High speed earth-moving equipments are coming more into demand owing to the current need for economical and efficient methods of digging, handling and spreading materials. As much of the material included is hard and heavy, each major component of the moving machines must bear a full load.



The unit in operation

The D.W. 21 engine was specifically designed for this machine and delivers 225 honest H.P. at the flywheel. The scraper attachment has a struck capacity of 20 cu. yd. and a heaped capacity of 23 cu. yd. The scraper is equipped with flat-double bottom bowl, high strength structure and the other traditional features of the scrapers manufactured by the Birtley company. They are made to the design and technical specification of the "Caterpillar" production and are interchangeable unit for unit and part for part. The scraper is operated by No. 27 cable control, has a load capacity of 25 tons, and is 29 ft. 6½ in. in length as an individual unit and 40 ft. 7 in. with tractor. The unit is 11 ft. 7 in. wide.

The excavation of the Spade Mill Reservoir Site is to be completed by September of next year, a task which will involve the removal of approximately 1,750,000 cu. yd. of earth in the creation of a dam of 212,000,000 gals. capacity. It is stated by the Birtley company that the Birtley scrapers on site are actually shifting 27 cwt. to the cu. yd., and that load capacity appears to be in the region of 30 tons.

METALS, MINERALS AND ALLOYS

COPPER.—An important statement was made at a press conference in San Francisco last week by Mr. F. S. Hann, treasurer of the Kennecott Copper Co., regarding the trend in the level of U.S. domestic copper production over the next few years. According to Reuter's report of this statement Mr. Hann said that the development of new mining projects now in hand should produce a net increase of 250,000 tons per annum in domestic copper production by 1956. In the Western United States, American copper companies were, he added, working on 12 important new mining projects with a total capacity of 320,000 tons of copper per annum. Part of this increase would, however, be offset by the exhaustion of existing mines.

This forecast is, of course, quite contrary to the estimates made in the Paley report which foresaw a period of static or slightly declining copper production in the States over the next 25 years. The Paley report's estimates were based on the conclusion that known ore reserves plus the future discoveries, which might reasonably be expected, could do no more than maintain output at the then rate of around 800,000 s.tons. Support for this view was based on the fact that during World War II practically all known occurrences of copper mineralization in the U.S. had been explored and that those found to be of commercial grade had been or were being prepared for production and it was, according to the report, the prevailing view among geologists that with existing techniques and knowledge the chances were small of further discoveries outside the known districts.

In view of this notable contrast between the Kennecott statement and the Paley report it seems highly pertinent to ask the extent to which this new production represents high cost copper which has been brought into production by the Administration's price support programme. At the time when the Paley report was written, domestic producers were still getting 24½ c. per lb. and it is possible that the apparent discrepancy may be a measure of the extent to which higher prices coupled with Government guarantees have brought marginal ore into production. In so far as this is so, and bearing in mind the large low cost production increases which are scheduled in Rhodesia, Chile and Peru over the next few years, the increases in U.S. output may not last much longer than the period of government price support. Moreover, as we have already seen earlier this year, the big American copper corporations have shown considerable flexibility in the operation of their main mining operations and will, no doubt, be inclined at the next threat of temporary copper superfluity to cut back the working week at these properties so as to work their sub-economic deposits while the going is good.

The U.S. copper market has remained strong this week with June bookings now over 75,000 tons. Spot metal is reported to be tight with the trade nursing its stocks in anticipation of the scheduled cut in domestic copper output during the fortnight's holiday period in July.

LEAD AND ZINC.—In the middle of last week the G.S.A. invited producers to make offers of domestic lead and zinc mined on or after April 1 last for delivery by August 2. All offers of lead at the ruling price of 14½ c. and subsequently offers down to 14 c. were rejected on the grounds that the price was not acceptable. This led to the New York lead price being cut back to 14 c., but buyers still held off awaiting clarification of the government's policy. Latest developments are reported by our London Metal Exchange correspondent.

A portion of the zinc tonnages offered, on the other hand, were accepted at the current market price of 11 c. Although there was no indication as to the tonnage bought, *The Wall Street Journal* believes the total may have been around 5,000 tons.

The Illinois Zinc Co. is reported to be planning to re-open its Kearney mine near Silver City, New Mexico, which had been producing at a rate equivalent to about 6,000 tons of refined zinc per annum until its shut down in January, 1953. The re-opening is reported to be due to the recent improvement in the zinc price which suggests confidence by the company in the U.S. Government's intention to support zinc at 11 c. or better.

There is no further information regarding the action which

President Eisenhower will take on the Tariff Commission's report, which is said to have urged a 15 per cent increase in lead and zinc duties under the escape clause in the Tariff Bill. However, the President is under no compulsion to take an immediate decision, he may well be waiting to see the effect on the industry of present G.S.A. purchases.

TIN.—A communique was issued by the Interim Tin Committee at the end of its two day meeting in London last Friday. This committee, which was appointed at the conclusion of the Geneva Tin Conference, is responsible for the preparatory work leading up to the establishment of the International Tin Council in the event of the Tin Agreement being ratified. Last week's meeting was concerned with the preparation of rules of procedure which might be submitted to the Tin Council. Further work on this is now in the hands of a drafting committee which will report back to the Interim Committee at its next meeting in London on July 12.

Incidentally, a point about the ratification of the Tin Agreement, which may not be generally appreciated, is that the signing of the agreement by the producer and consumer countries carrying the requisite number of votes does not of itself automatically bring the agreement into effect. After the signatures have been secured there must subsequently be a formal act of ratification for which apparently no deadline has been set.

As things stand at the moment this may turn out conveniently as whatever the long-term supply-demand outlook for tin may be there are no signs at present of surplus stocks sufficient to enable the producing companies to float the buffer stock without inconveniencing consumers. The U.S. Government, which already has a 20,000 ton contract running with Indonesia for this year, is now reported to have purchased a further 12,000 tons of Bolivian concentrates to provide for the continued operation of the Texas smelter for a further year from the end of this month. This, coupled with signs of the decline in world output recorded here last week, seems to assure a continued tightness in supplies at least until the end of this year, and it may therefore, well be found convenient not to bring the Tin Agreement into effect until the beginning of 1955.

ALUMINIUM.—Primary aluminium production in the States established another all time record last month with an output of 125,088 s.tons making a total of 594,590 s.tons for the year to date compared with 494,552 in the corresponding period of 1953, an increase of about 20 per cent. Increases of this magnitude, coupled with a tapering in defence requirements must surely lead to increased sales pressure in civilian markets. Indeed, perusal of the American press suggests that this is already well under way with the emphasis on the building industry and other constructional uses which offer potential large tonnage consumption, and it may well prove to be the steel and timber industries rather than the other non-ferrous metals which will feel the main impact of this young industry's energetic selling.

Iron and Steel

British steel production reached its highest peak last month, averaging 374,500 tons a week and beating the previous record of 368,300 tons a week in April. Our steel plants are now producing 87 per cent more than they did in 1935, and after allowing for a sharp decline during the holiday months of July and August it is now certain that the target figure of 18,500,000 tons for the year will be reached. Heavy home industrial requirements, linked with a substantial curtailment of imports, has sustained the activities of the steel makers. The U.K. has bridged the gap between supply and demand which in 1952 and 1953 had to be met by heavy imports from abroad.

But stocks have been replenished, producers have very largely overtaken their commitments, and they are now embarked upon a more resolute drive for overseas trade. For the success of this effort the conditions are now more favourable. A change for the better is discernible in world markets. In U.S.A. the downward trend of steel production has been reversed. The

revival as yet is little more than incipient but the prevailing belief is that the recession has ended. In Western Europe the cartel export prices have been raised, and British quotations to overseas buyers are now on a competitive level.

The various advances in the fixed maximum prices charged to home consumers also bear evidence of careful thought.

The fact that foundry pig iron is only up 5s. per ton compared with a rise of 15s. per ton for basic iron is a direct encouragement to the foundry trade which has been having a rather bad time of late, and it may be that the signs of returning animation in the re-rolling industry owe their origin in some measure to the unchanged level of prices for re-rolling material.

The London Metal Market

(From Our Metal Exchange Correspondent)

The report of the Interim Committee issued last week contained nothing of interest, and with the present political situation in France the future of the Tin Agreement now appears to be even more uncertain than before. The London market has been featureless. In Singapore the demand is maintained, and on Thursday morning the Eastern price was equivalent to £738½ per ton c.i.f. Europe.

The copper market remains extremely steady, and it appears that almost the whole of the outstanding short sales have now been covered and therefore the re-appearance of a large back-wardation is considered improbable. This situation could, of course, change if the whole price structure appeared weak, but, with the disposal of the Chilean copper presenting no difficulties and with sustained demand in other countries, this appears unlikely for the time being. It is known that the Exchange's Sub-Committee which is considering the Copper Contract has now made its report, and the matter is now with the Committee; in any event the introduction of any additions or alterations will take some time, as it is almost certain that the trade as a whole, apart from members of the Exchange, will be asked to give their opinions on any proposals made.

The lead market has been dominated by the actions of the American stockpile authorities who, in spite of the mandate to purchase material with a view to keeping up the price, refused to buy metal offered at 14½ c. per lb., and it was assumed that this attitude was adopted as the ½ c. had only been added after news of the new programme. It appears to have been correct as it was subsequently announced that the original directions to purchase contained an undisclosed ceiling price. Subsequently, in order to obtain material before the end of this fiscal year, new instructions were given for metal to be purchased at market prices.

The zinc market has declined in sympathy with lead, but in this case the stockpile authorities have accepted certain tonnages at the current market price, and as most authorities feel that 11 c. per lb. is too low for zinc it is to be expected that further purchases will be made: the need for such purchases was underlined this week by the publication of the May stock figures for the U.S. which showed an unexpected rise after the fall in April.

Closing prices and turnovers are given in the following table, in which the column relating to June 10 covers four days instead of the usual five owing to the Whitsuntide holiday:—

	June 10		June 17	
	Buyers	Sellers	Buyers	Sellers
Tin				
Cash	£727	£727½	£725½	£726
Three months	£726	£726½	£725	£726
Settlement		£727½		£726
Week's turnover	375 tons		575 tons	
Lead				
Current month	£97	£97½	£97½	£97½
Three months	£94½	£94½	£95½	£95½
Week's turnover	1,325 tons		3,500 tons	
Zinc				
Current month	£80	£80½	£80	£80½
Three months	£80½	£80½	£80½	£80½
Week's turnover	3,050 tons		1,375 tons	
Copper				
Cash	£236½	£237	£239½	£239½
Three months	£236	£236½	£237½	£238
Settlement		£237		£239½
Week's turnover	4,425 tons		5,875 tons	

OTHER LONDON PRICES—JUNE 17

ANTIMONY

English (99%) delivered,		
10 cwt. and over	.. ..	£210 per ton
Crude (70%)	£200 per ton
Ore (60% basis)	22s./24s. nom. per unit, c.i.f.

NICKEL

99.5% (home trade)	£483 per ton
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OTHER METALS

Aluminium, 99.5%,	£156 per ton	Osmium, £50 oz. nom.
Bismuth		Palladium, £7 10s. oz.
(min. 4 cwt. lots) 16s. lb.		Platinum, £30/£31
Cadmium (Empire), 13s. lb.		Rhodium, £43 10s. oz.
Chromium, 6s. 5d./7s. 6d. lb.		Ruthenium, £23 oz.
Cobalt, 20s. lb.		Quicksilver, £90-£92
Gold, 248s. 11d. f.oz.		ex-warehouse
Iridium, £52 10s. oz. nom.		Selenium, 35s. 9d. nom.
Magnesium, 2s. 6d. lb.		per lb.
Manganese Metal (96%-98%)		Silver 73d. f.oz. spot and
£225/£262		72½d. f.d.
Osmiridium, £40 oz. nom.		Tellurium, 15s./16s. lb.

ORES, ALLOYS, ETC.

Bismuth	.. ..	60% 8s. 3d. lb. c.i.f.
	.. ..	50% 7s. 3d. lb. c.i.f.
Chrome Ore—		
Rhodesian Metallurgical (lumpy)	£13 12s. per ton c.i.f.	
Refractory	£13 4s. per ton c.i.f.	
Magnesite, ground calcined	£26-£27 d/d	
Magnesite, Raw	£10-£11 d/d	
Molybdenite (85% basis)	102s. 4d.-103s. per unit c.i.f.	
Wolfram (65%)*	World buying 155s.-165s.	
"	U.K. Selling 165s. + 10s. charges	
Scheelite (65%)*	World buying price 155s.	
"	U.K. Selling 165s. + 10s. charges	
Tungsten Metal Powder	16s. 1d. nom. per lb. (home)	
(98% Min. W.)		
Ferro-tungsten	13s. 1d. nom. per lb. (home)	
Carbide, 4-cwt. lots	£35 13s. 9d. d/d per ton	
Ferro-manganese, home	£54 15s. 0d. per ton	
Manganese Ore Indian c.i.f. Europe		
(46%-48%)	6s. 8d. per unit	
Brass Wire	2s. 6½d. per lb. basis	
Brass Tubes, solid drawn	1s. 10½d. per lb. basis	

* ex Ministry stock for prompt delivery from June 18

U.K. METAL AND MINERAL IMPORTS—APRIL 1954

	Units	April 1954	Jan.-April 1953	Jan.-April 1954	Increase or decrease in 1954 over 1953
Non-ferrous metals and manufactures :					
Aluminium and alloys	Cwt.	212,855	736,654	949,247	+ 212,593
Bismuth metal	Lb.	97,495	172,554	236,710	+ 64,156
Cadmium	Lb.	117,466	178,633	536,463	+ 357,830
Cobalt and alloys	Lb.	360,238	1,014,588	2,364,643	+ 1,350,055
Copper, Electrolytic	Cwt.	448,220	1,450,527	1,548,984	+ 98,457
" Other sorts	Cwt.	222,051	813,287	891,633	+ 78,346
Lead and lead alloys	Cwt.	315,937	991,199	1,346,093	+ 354,894
Mercury	Lb.	125,501	629,140	729,928	+ 100,788
Nickel	Cwt.	19,893	51,803	53,322	+ 1,519
Tin	Cwt.	13,825	15,669	22,154	+ 6,485
Zinc and zinc alloys	Cwt.	300,161	1,477,598	1,260,394	- 217,204
Ores and Concentrates :					
Antimony ore and conc.	Tons	1,596	3,453	2,963	- 490
Bauxite	Tons	41,785	100,701	124,796	+ 24,095
Chromium ore	Tons	14,895	55,710	44,265	- 11,445
Iron pyrites	Tons	41,735	77,173	193,703	+ 116,530
Manganese ore	Tons	50,704	174,643	187,178	+ 12,535
Molybdenum ore	Tons	471	1,385	1,923	+ 538
Nickel ore, conc. & matte	Tons	2,770	12,016	11,010	- 1,006
Tin ore & conc.	Tons	7,894	13,952	21,555	+ 7,603
Titanium : Ilmenite	Tons	19,329	35,182	52,528	+ 17,346
" Other sorts	Tons	484	2,006	2,286	+ 280
Tungsten ore	Tons	365	2,190	1,070	- 1,120
Zinc ore and conc.	Tons	17,794	71,339	42,347	- 28,992
Non-metalliferous mining products :					
Asbestos	Tons	9,464	31,387	33,740	+ 2,353
Magnetite	Tons	844	6,756	6,942	+ 2,186
Sulphur	Tons	17,094	70,363	109,983	+ 39,620

(By Our Stock Exchange Correspondent)

FINANCE	Price	+ or -	Price	+ or -	Price	+ or -	Price	+ or -
	June 16	on week	June 16	on week	June 16	on week	June 16	on week
African & European ..	2 1/2	-	O.F.S.		MISCELLANEOUS GOLD		TIN (Nigerian and Miscellaneous) contd.	
Anglo American Corp'n.	6 1/2	-	Freddies ..	6/3	(contd.)		Geevor Tin ..	11/6
Anglo-French ..	18/6	-	Freddies Consolidated	21/3	St. John d'El Rey ..	18/3	Gold & Base Metal ..	3/3
Anglo Transvaal Consol.	22/6	-	F. S. Geduld ..	4 1/2	Zams ..	35/6	Jantar Nigeria ..	9/3
Central Mining (2 1/2 shrs.)	42/3	-	Geoffries ..	12/3	DIAMONDS & PLATINUM		Jos Tin Area ..	13/6
Consolidated Goldfields	46/6	-	Harmony ..	31/6	Anglo American Inv ..	5 1/2	Kaduna Prospectors ..	2/6
Consol. Mines Selection	30/6	-	Lorraine ..	4/6	Casts ..	22/6	Kaduna Syndicate ..	2/4 1/2
East Rand Consols ..	2/7 1/2	-	Lydensburg Estates ..	16/10 1/2	Cons. Diam. of S.W.A.	5 1/2	London Tin ..	5/6
General Mining ..	3 1/2	-	Merrispruit ..	11/6	De Beers Defd. Bearer	91/3	United Tin ..	3/-
H.E. Prop ..	40/-XD	-	Middle Wits ..	12/6	De Beers Pfd. Bearer ..	9/7	SILVER LEAD, ZINC	
Henderson's Transvaal.	7/3	-	Ofits ..	48/9	Pots Platinum ..	17/3	Brown Hill South ..	47/-
Johnnies ..	42/-	-	President Brand ..	60/6	Watervaal ..	15/-	Burma Mines ..	2/4 1/2
Rand Mines ..	3 1/2	-	President Steyn ..	4 1/2	COPPER		Consol. Zinc ..	32/6
Rand Selection ..	35/7 1/2	-	St. Helena ..	62/-	Chartered ..	72/6	Lake George ..	7/6
Strathmore Consol ..	27/6	-	Virginia Ord ..	13/3	Esperanza ..	6/4 1/2	Mount Isa ..	40/9XD
Union Corp. (2/6 units)	26/6	-	Welkom ..	18/-	Indian Copper ..	4/7 1/2	New Broken Hill ..	26/6
Vereeniging Estates ..	4 1/2	-	Western Holdings ..	3 1/2	Messina ..	59/3	North Broken Hill ..	1/-
Writs ..	34/4 1/2	-	WEST AFRICAN GOLD		Nchanga ..	7 1/2	Rhodesian Broken Hill	11/10 1/2
West Wits ..	40/-	-	Amalgamated Basket ..	1/6	Rhod. Anglo-American	64/6	San Francisco Mines ..	18/6
RAND GOLD			Ariston ..	5/6	Rhod. Katanga ..	13/6	Uruwira ..	3/7 1/2
Blyvoors ..	33/6	-	Ashanti ..	19/4 1/2	Rhodesian Selection ..	16/9	MISCELLANEOUS	
Brakpan ..	7/3	-	Bibiani ..	4/-	Rhokana ..	22 1/2	BASE METALS & COAL	
City Deep ..	16/-	-	Bremang ..	1/9	Rio Tinto ..	22 1/2	Amal. Collieries of S.A.	46/6
Consol. Main Reef ..	19/4 1/2	-	G.C. Main Reef ..	3/3	Roan Antelope ..	16/9	Associated Manganese ..	4/6
Crown ..	38/9	-	W. Selection & Dev ..	1/9	Selection Trust ..	35/6	Cape Asbestos ..	22/6XD
Daggas ..	3 1/2	-	Konongo ..	2/4 1/2	Tanks ..	90/-	C.P. Manganese ..	68/6XB
Doornfontein ..	22/6	-	Lynhurst Deep ..	9 1/2	Thariss Sulphur Br ..	46/3	Consol. Murchison	43/9
Durban Deep ..	28/1 1/2	-	Marlu ..	1/-	TIN (Eastern)		Mashaba ..	44d
E. Daggas ..	11/6	-	Taquad & Abosso ..	2/-	Ayer Hitam ..	25/9	Natal Navigation ..	3 1/2
E. Geduld .. (4/- units)	27/-	-	AUSTRALIAN GOLD		Gopeng ..	8/9	Rhod. Montelloe ..	1/3
E. Rand Props ..	2 1/2	-	Boulder Perseverance ..	2/10 1/2	Hongkong ..	6/7 1/2	Turner & Newall ..	77/9XD
Geduld ..	3 1/2	-	Gold Mines of Kalgoorlie	13/6	Ipo ..	15/6	Wankie ..	13/4 1/2
Govt. Areas ..	11/3	-	Great Boulder Prop ..	8/4 1/2	Kamunting ..	6/10 1/2	Witbank Colliery ..	3 1/2
Grootevlei ..	19/-	-	Lake View and Star ..	14/-	Kepong Dredging ..	14/-	CANADIAN MINES	
Libanon ..	10/9	-	Mount Morgan ..	18/-	Kinta Tin Mines ..	10/-	Dome ..	\$28
Lupaards Vlei ..	19/9	-	North Kalgoorlie ..	7/4	Malayan Dredging ..	26/3	Hollinger ..	\$28
Marievale ..	18/3	-	South of Gwalia ..	4/4	Pahang ..	10/6	Hudson Bay Mining ..	\$81
Modderfontein ..	14/6	-	Sons of Kalgoorlie ..	12/6	Pengkalen ..	8/3	International Nickel ..	\$74
New Kleinfontein ..	13/9	-	Western Mining ..	11/9	Petalang ..	7/4 1/2	Minning Corp'n. of Canada	\$5 1/2
New Pioneer ..	12/-	-	MISCELLANEOUS GOLD		Rambutan ..	15/-	Noranda ..	\$3 3/4
Randfontein ..	60/-	-	Cam and Motor ..	9/-	Resmea Tin Mines ..	7X/2XD	Queumont ..	6/6
Robinson Deep ..	16/10 1/2	-	Champion Reef ..	5/-	Southern Kinta ..	16/-	Yukon ..	3/9
Roos Deep ..	13/9	-	Falcon Mines ..	7/6	S. Malayan ..	23/9	OIL	
Simmer & Jack ..	20/7 1/2	-	Globe & Phoenix ..	24/-	S. Tronoh ..	8/9	Anglo-Iranian ..	\$26
S.A. Lands ..	20/7 1/2	-	3d G.F. Rhodesian ..	4/9	Sungei Kinta ..	10/10 1/2	Apex ..	55/-
Springs ..	3/3							

COMPANY NEWS AND VIEWS

Rand Dividend Season Closes

With the declaration of June half-yearly dividends in respect of the operating companies of Consolidated Gold Fields, Anglo Transvaal Consolidated and Johannesburg Consolidated Groups, concludes the Rand dividend season. From the following table a comparative picture may be obtained of current dividends and those of the preceding half-years.

Company	Dec. 1952 s. d.	June 1953 s. d.	Dec. 1953 s. d.	June 1954 s. d.
Central Mining				
Blyvoor* ...	1 6	1 4	1 4	1 2
City Deep ...	1 0	6	6	6
Consolidated Main Reef* ...	2 3	1 9	1 9	1 9
Crown ...	2 6	2 6	3 0	3 0
Durban Deep ...	2 0	1 9	1 9	1 6
E. Rand Prop. ...	2 6	1 9	1 9	1 9
Modder East* ...	1 6	1 6	1 6	1 6
Rose Deep ...	1 3	—	—	—
Rand Mines ...	3 0	3 0	3 0	3 0
Trans. Gold ...	9	6	9	6
Goldfields				
Libanon* ...	3	3	3	3
Luipaards Vlei* ...	7½	7½	7½	7½
Rietfontein Con. ...	1 4½	1 3	1 4½	1 3
Robinson Deep ...	9	9	9	1 3
Simmer ...	4	4	4	3 0
Sub Nigel* ...	4	4	3 9	3 9
Venterpost* ...	5	5	5	5
Vlakfontein ...	8	6½	6½	6½
Vogels ...	1 0	1 1½	1 1½	1 6
W. Driefontein* ...	—	6	9	1 3
Union Corporation				
East Geduld ...	2 1	1 9	1 9	1 9
Geduld ...	6 3	5 9	5 9	5 6
Grootvlei ...	1 3	1 2	1 1	1 0
Marievale ...	10	10	11	11
General Mining				
S. Roodepoort* ...	9	9	9	9
W. Rand Con. ...	1 6	1 9	2 0	1 9
Johannesburg Consolidated				
Govt. G.M.A. ...	1 0	1 0	9	7½
Randfontein ...	1 0	1 0	1 0	1 0
Anglo-Transvaal				
Rand Leases* ...	1 0	4½	3	4½
Village M.R.* ...	1.8	1.8	1.5	1.5

*Companies ending their financial years in June

On the whole, final dividends announced by the companies which end their financial years in June have proved to be substantially as forecast in our issue of May 7 on the basis of our analysis table of March quarterly results for the Rand and O.F.S. producing mines (see *M.J.*, May 7, pages 550-552).

One notable exception, however, was the unexpectedly large increase in dividends from West Driefontein which, having only declared its maiden dividend of 6d. per share last June, has now reached a level of 1s. 3d. On the other hand, our view that Blyvoor's dividend appeared vulnerable has been justified in the event, although the cut apparently has caused surprise in some quarters.

S.A. Gold Mining Taxation

That the gold mining industry in South Africa suffers from a far greater burden of taxation than do industrial companies of that country is, perhaps, but one of the many facets of gold mining taxation in South Africa unknown to the greater body of British investors. A very useful purpose has therefore been served by Mr. J. C. Thoms, Chief Accountant of the Anglo American Corporation who in the June issue of that company's quarterly review *Optima* goes a long way towards clarifying for the average investor the extremely complex tax processes of the South African gold mines. His article is strengthened by easily understood examples of taxation calculations peculiar to the gold mining industry. Generally speaking, of course, South African gold mining taxation laws are designed to encourage the greatest possible extraction of gold from the ore available. It is for this reason that the rate of taxation is computed by a formula which treats low grade properties more leniently than the richer mines.

A.B.A.—Record Production but Profits Down

Last year's record level of gold production and revenue figures was again exceeded during the year to September 30, 1953, by Amalgamated Banket Areas. Despite this achievement, however, a rise in production costs and a fall in the grade of ore recovered, together with the absence of premium gold revenue, had the effect of bringing net profits down to a lower level than for the previous year.

Year to Sept. 30	Milled (s.tons)	Grade (dwt.)	Recovery (%)	Yield (oz.)	Cost* (s. d.)	Dev'tment (ton) Accompl'd (ft.)
1953	721,370	3.2	95.0	111,082	34 3	10,789
1952	635,999	3.4	95.7	103,523	33 10	10,820

* Including development charges

Nevertheless, revenue from bullion proceeds for the year showed an increase of £100,415 to £1,443,977 against £1,343,562 for the preceding period and a dividend of 5 per cent on the issued capital of £2,884,900 in stock units of 3s. was maintained.

Year to Sept. 30	Bullion Revenue*	Mining Costs £	Other Expenses £	Net Profit† £	Divi- dend	Carry Forward £
1953	1,443,977	1,148,703	191,814	14,402	79,335	128,020
1952	1,343,562	1,000,407	204,236	69,421	75,729	196,559

* Less realization charges

† After expenditure pending resumption of production at Fanti Mine of £89,447 (1952 - £70,287)

The main constituents of Amalgamated Banket Areas are, in order of importance relative to the tonnage produced, the Pepe open-cast mine (a low grade but large tonnage producer), Taquah/Mantraim, Akoon, Tamsoo and Fanti. As regards grade, however, Akoon is the most important and last year yielded 5.25 dwt. per ton; second to this came Tamsoo 4.57 dwt.; Taquah/Mantraim at 4.58 dwt., while Fanti and Pepe were the lowest with 3.87 dwt. and 1.49 dwt. respectively.

Total ore reserves estimated as at September 30, 1953, stood at 3,699,927 tons of which 1,937,984 tons, averaging 5.5 dwt. over 40.6 in., represented underground ore and 1,761,943 tons, averaging 1.8 dwt. over 122.6 in., was attributable to the Pepe open-cast section. Development footage accomplished during the year was maintained at a similar level to that during the preceding period.

Now that the major items of heavy expenditure appear to be out of the way, in particular caretaking costs for Fanti and Tamsoo, future prospects for the company are much brighter than they have been for some time. Of major importance in this respect was the completion of the final ropeway connecting Fanti with the central mill last July. Both Fanti and Tamsoo are now joined to the central mill and contributing to total production.

But the first seven months of the current year's operations, although showing increases in both tonnages and yields, have resulted in decreased profits. During May, however, a sharp increase in profits took place and a total of £26,669 was earned against £16,315 for April. This was the highest profit figure since September, 1952. The cumulative picture, therefore, has benefited from this increase and profits until the end of May at £124,100 come close to the previous year's figure of £139,700.

At the present price of about 1s. 6d., a yield of 9 per cent can be obtained on the shares of this company and in the light of recent progress there would be good grounds for suggesting that they are not at present overvalued. Meeting, London, June 22. Major General W. W. Richards is chairman.

Kalgoorlie Southern—Proposed Issue and Share Bid

A letter has been sent to the shareholders of Kalgoorlie Southern Gold Mines which outlines the drilling results to date from which it is eventually hoped to discover an extension to the Golden Mile in the Kalgoorlie district of Western Australia—a venture aptly described by Mr. G. Lindesay Clark, the chairman, as “a search for the repetition of a gold field.” In this letter, which describes results as “encouraging,” it is stated that additional funds must be raised for a programme of drilling further south along the Cavalier structure which is now considered justified. The results of the four holes completed to date have, in fact, confirmed the original belief that the quartz dolerite of the Golden Mile, its fold structure, and the type of rock alteration characteristic of the general environment of the ore producing area, continue beneath the Black Flag sediments into the area to the south of the field.

Accordingly, it is proposed to increase the authorized capital of the company by the creation of 1,000,000 new shares of 5s. each, and subject to the passing of the necessary resolutions, 740,900 shares will be offered to members on the basis of one new share for each share held, payable as to a 1s. per share on acceptance. It is not anticipated that the first call of 1s. will be made before 1955 and on present indications the funds to be received from the payment of 2s. per share should be sufficient to carry out the drilling programme at present envisaged. The Western Mining Corporation and Gold Mines of Kalgoorlie have indicated their intention to take up their entitlements in this issue which amount to 324,240 shares.

In a recent announcement to shareholders, the Gold Mines of Kalgoorlie stated that an offer had been made for the acquisition of the whole of the issued shares in South Kalgoorlie Consolidated; it went on to say that full details of this offer would follow shortly. South Kalgoorlie Consolidated, however, in a circular informing its shareholders of this offer recommends members to accept, and promises a further statement giving full details shortly.

The news of this offer, naturally enough, touched off a burst of stock market activity which swiftly raised the price of the company's ordinary shares from a level around 6s. 7d. to about 12s. As the general meeting at which the proposed increase in capital will be considered is to be held in Melbourne, Australia, on June 17, it may not be long before further news of the bid is released.

Nchanga's 75 per cent Final

A preliminary profit statement by Nchanga Consolidated Copper Mines discloses that record profits, before taxation, of £14,218,077 (£14,042,101) were earned during the year to March 31, 1954. After deduction of tax liability and the addition of tax previously over-provided, together with a transfer from sales equalization reserve, £10,140,151 (£8,748,525) remained for appropriation. Out of this total dividends of 100 per cent requiring £7,000,000 are being paid compared with 75 per cent last year.

Burma Corporation's Increased Profits

During the quarter ended March 31, 1954, the Burma Corporation (1951) (a lead-zinc and silver producer owned equally by Burma Mines and the Burmese Government) showed further progress. In these three months the company earned a working profit of £87,690 which shows a considerable advance over a total of £50,685 for the last quarter of 1954. Profits for the nine months to March 31 this year amount to £187,957 against a loss of £176,652 for the corresponding period of the last financial year. Fuller details of production figures, etc., appear elsewhere on page 752.

Siamese Tin's Lower Profits

Although the total ground dredged by the Siamese Tin Syndicate during the year to December 31, 1953, was slightly less than in the preceding period, the production of tin ore was increased, but, unfortunately, the severe fall in the price realized for tin by £137 to an average of £538 against £675 last year, considerably reduced the company profits. A measure of assistance towards increasing production, however, was given by Bangrin Tin Dredging Co. which was acquired last September.

Year to Dec. 31	Hours Worked		Ground Worked		Outputs (ore)	
	Total	% of possible	cu. yd. (000)	cu. yd. per hr.	Total (tons)	lb. per cu. yd.
1953	45,158	81	9,077	201	2,070*	0.51
1952	39,672	78	8,048	203	1,720	0.48

* Not including 29 tons from retreatment of tailings

Note 1—Table includes Bangrin production from two dredges only for period September-December.

Note 2—The Ngow No. 1 dredge did not work during 1953. In order to provide comparisons, figures for 1952 have been adjusted to exclude the production statistics relating to this dredge.

Of the above production, Bangrin Tin Dredging Company contributed 696,200 cu. yd. and 210 tons of tin ore.

Overall production costs showed a reduction from £366 to £343 per ton of tin ore, the average mine cost having fallen from 20.1 to 19.7d. per cu. yd. These improvements were partly due to a gradual weakening of the tical, to the Siamese Government's action in reducing royalty, and partly to an increased value of the ground worked.

Production of tin metal for the year amounted to 1,546 tons

and the total gross revenue of the group was £586,410, compared with £775,800 for the preceding period, appropriated as follows:—

Year to Dec. 31	Gross Revenue (abroad)*	(London)†	Taxa- tion	Net Profit	Divi- dends	Carry Forward
1953	£ 563,524	£ 22,886	£ 209,141	£ 134,822	£ 104,517	£ 64,539
1952	729,525	26,275	327,458	198,356	166,326	51,857

* Before duty, depreciation add amortization £224,297 (£216,031)

† Dividends and interest

Total dividends paid in respect of the year amounted to 35 per cent on an issued capital of £546,400 in 5s. stock units. This compares with a distribution amounting to 150 per cent paid last year on the previous capital of £150,000. The increase in the issued capital of the company was due to the purchase of Bangrin Tin Dredging Co. and also to a bonus issue made during the year.

The company has been recently engaged, with considerable success, in prospecting new properties, and the outcome of these operations is reflected in the latest estimate of group reserves as at December 31, 1953, the total of which was 153,000,000 cu. yd. averaging 0.51 lb. per cu. yd. against 132,872,750 cu. yd. of same average content a year ago.

Mr. K. O. Hunter, the chairman, in his statement to shareholders, also refers to the Lowland Lead Mines in which the Rio Tinto Company have a 51 per cent interest. A decision regarding this property is expected to be reached during the next few months. But the tonnage which could be made readily available for mining may be smaller than was hoped.

At a present price of around 7s. 3d. xd the 5s. ordinary shares of this company give the high yield of over 23 per cent which reflects current political uncertainty in Siam and Malaya due to the deteriorating situation in French Indo-China. Meeting, London, June 29.

Lobitos Satisfactory Dividend

During the year ended December 31, 1953, the revenue of Lobitos Oil Fields showed a small decline from the previous year's figure of £2,221,978 to £2,203,354. This can be attributed to the decline in freight rates with their consequent effect on the company's tanker fleet's earnings.

The company's main oil producing interests in Peru are held through its subsidiary whose production of 461,225 tons of crude oil last year represented an increase of 6.6 per cent over the previous year. The company is, together with the International Petroleum Co., also working an area of joint development in the Lobitos vicinity which yielded 129,181 tons during the year resulting in a share of 64,490 tons being attributable to Lobitos Oil Co. Besides this, however, the company has an agreement with the Douglas Oil Company of California for the development of an area in the Continental Shelf Zone which lies off Lobitos Bay; a refinery at Ellesmere Port; its fleet of tankers and various petroleum distribution companies. The company's interests also extend to Canada where it has joint interests in well servicing and drilling companies. It is hoped that eventually the company will find it possible to start oil production in that country.

Year to Dec. 31	Total Revenue	Taxa- tion	Net Profit	Divi- dends	To Reserve	Carry Forward
1953	£ 2,203,354	£ 528,333	£ 593,651	£ 255,750	£ 438,444	£ 784,845
1952	2,221,978	569,869	833,555	125,250	619,288	895,995

Total distribution for the year to December 31, 1953, is made up of an interim dividend at 7½ per cent on an issued capital of £2,000,000 in 5s. units and a final dividend of 10½ per cent which is recommended on the new capital of £3,000,000, still in 5s. units, as increased by the recent free scrip issue. Total dividends for the year are, therefore, equivalent to 23½ per cent as against the previous 11½ per cent on the original capital. Related to the new issued capital of £3,000,000, however, the dividend is equivalent to 15½ per cent; a distribution which is over twice covered by earnings.

Figures from the consolidated balance sheet show that the company has a highly satisfactory liquid position with net liquid assets amounting to well over £3,000,000 of which cash balances and treasury bills made up the approximate total of £676,000.

Lobitos ordinary stock units now stand at around 7s. xd and on the assumption that a dividend of 13½ per cent will be paid the yield at this price is just over 9 per cent. This assumed level of distribution takes into account the necessity of servicing the £1,000,000 5½ per cent debenture stock recently issued free to members. Meeting, London, June 29. The Rt. Hon. Lord Forbes is chairman.

ANGLO AMERICAN CORPORATION OF SOUTH AFRICA, LIMITED

(Incorporated in the Union of South Africa)

SIR ERNEST OPPENHEIMER'S STATEMENT

The Thirty-Seventh Annual General Meeting of the Corporation will be held in Johannesburg on June 25, 1954. The following is from the statement by the Chairman, **Sir Ernest Oppenheimer**, which has been circulated to shareholders:

Southern Africa is still to-day a land of opportunity. The opportunities are as great now as they were when I first came to the Cape more than fifty years ago and became a South African. There was need then for money, for enterprise and for courage. Capital, enterprise and courage are still the main-springs of progress. But conditions have changed.

Fifty years ago capital was more freely available from overseas sources for undertakings that bore promise. There were big investors and there were many small investors—humble people who were prepared to risk their savings in ventures overseas in days when private fortune was no disgrace. To-day, after two great world wars and their legacies of debt, heavy taxation and currency restrictions, much less overseas capital for the development of the new countries of Southern Africa is available from private sources.

In a young developing country there is only one satisfactory solution to the economic difficulties that spring from the financial stringency I have described; and that is the rapid development of new enterprises that will earn revenue overseas and enable the country to create its own capital. Without new enterprise there must be stagnation. It has been this Corporation's special contribution to the solution of these difficulties that it refused to be daunted by unfavourable conditions but proceeded with large new enterprises in the determination to succeed.

This Corporation claims no special virtue in this. It was founded to make profits for its shareholders; and the enterprises and undertakings that the Corporation embarks upon are those that hold out prospects of reward. The Corporation's record of profits in recent years bears testimony to the fact that our shareholders' interests have been advanced. The following figures reflect the net profit earned, after providing for taxation:

1950	...	...	...	...	£2,340,000
1951	...	...	...	...	£2,894,000
1952	...	...	...	...	£3,015,000
1953	...	...	...	...	£3,265,000

FINANCE FOR NEW ENTERPRISES

In the crucial years since the last war Anglo American Corporation has been in the unusually favourable position of being able to command large sources of capital not only for pursuing its own "new" enterprises but also for assisting in the development of the undertakings of other organizations.

I set out hereunder detailed figures relating to the capital funds various companies of this Group obtained from London or from Continental sources each year during 1946 to 1953.

Year	South African Companies		Rhodesian Companies	
	London	Continent	London	Continent
1946	171,000	5,000	3,191,000	1,316,000
1947	4,858,000	325,000	—	—
1948	745,000	31,000	—	—
1949	4,065,000	285,000	—	—
1950	5,235,000	4,902,000	2,684,000	—
1951	3,084,000	111,000	19,000	2,000
1952	4,731,000	3,093,000	—	—
1953	557,000	41,000	8,541,000	271,000
	£23,446,000	£8,793,000	£14,435,000	£1,589,000

Total funds raised in London	...	£37,881,000
Total funds raised on the Continent	...	£10,382,000
Grand total of funds raised	...	£48,263,000

This total of £48,263,000 does not include the loans by the British and American Governments for establishing the uranium and sulphuric acid plants at a number of gold mines in South Africa. Nor do the figures for the Rhodesian companies include the amounts allocated from America to finance certain developments on the Copperbelt on the basis of repayment in metal.

In addition to the £16,024,000 raised in London or on the Continent by our Rhodesian companies, these companies have provided out of their own resources £29,800,000 for development and expansion since the end of the war.

These figures tell only part of the story. Very large sums have been made available by the De Beers Group of companies to our Group and to other Groups. The association between this Corporation and De Beers has been a very long and close one. Indeed, the origins of this Corporation lie in the stake its founders wished to have in the South African diamond industry.

It has been the policy of the De Beers Group during the prosperous post-war conditions in the diamond market to accumulate funds that could be used to protect the diamond industry during times of depression. The continuance of prosperity in the diamond trade has made it possible for the De Beers Group to use these funds for short-term investment in South Africa.

Within the De Beers Group there have also accumulated since the war unexpected profits derived from the sale of stocks of diamonds at enhanced prices. The directors of De Beers decided that some part of these profits should be devoted to assisting in the economic development of Southern Africa. In this they were reviving the tradition of Cecil John Rhodes. The De Beers Investment Trust was established in 1952 with a subscribed capital of £22,000,000 provided by the De Beers Group, and has ever since pursued a policy of making funds available to assist the financing of enterprises that could be regarded as advancing the economic progress and development of Southern Africa.

The extent of the assistance that the De Beers Group has thus given can be gauged from the ensuing record of both short and long-term loans and investments as they were early in May, 1954:

Deposits with National Finance Corporation	...	£20,849,000
Loans or Investments by De Beers Investment Trust Limited:		
West Rand Gold Mines	...	5,057,875
Orange Free State Gold Mines	...	16,291,364
Finance Companies	...	1,742,628
Rhodesian Copper	...	245,000
Rhodesian Coal	...	490,365
Chemical Industry	...	5,060,977
TOTAL	...	£49,737,209

The financial outlook for South Africa is set fair and the country can look forward to a period of great and growing prosperity. To these happier circumstances diverse factors have contributed. Notable amongst them has been the development of the uranium industry, which will yield valuable profits and will strengthen the Union's foreign exchange position. Equally important has been the development of the Orange Free State goldfield.

THE O.F.S. GOLDFIELD

Much more remains to be done, but we can claim that the new goldfield has been proved beyond doubt. The major task of financing the new mines has been completed: for the seven mines of our Group in that area £82,321,000 has been found and most of it has already been spent. Three of the Group mines have reached the stage of profitable production: a fourth, the President Brand mine, is rapidly approaching that stage. It will not be long now before all the developing mines become producers.

The Klerksdorp area is becoming increasingly important as a centre of gold and uranium production. Near Orkney the Vaal Reefs property has become a developing mine, after surface and underground prospecting had obtained satisfactory and encouraging results. Like the Western Reefs mine, it will, we hope, be a uranium producer as well as a profitable gold producer. At Van Rhyndorp, on the edge of the Namaqualand desert, the mining of monazite and other rare minerals started not many months ago. These minerals have become important in relation to atomic energy.

The Corporation's Coal Department has also been active. At Vryheid Coronation Colliery a large coking plant, capable of carbonizing the total output, has been established. New ventures include the Vierfontein, New Largo, Cornelia, Bertha No. 2 and Blesbok collieries.

The Department was given a new responsibility during 1953 when the Wankie Colliery Company came under the technical direction and administration of the Group.

Mention of this undertaking has taken my review of the Group's activities into the territory of the new Federation,

where some of the most important undertakings of the Group are located.

The two copper-producing companies of our Group in Northern Rhodesia are of vital importance to the Federal economy. These companies have gone from strength to strength in output, capacity and equipment. A large new copper-producer will be established when the Bancroft Mines' property reaches the production stage.

The importance of Wankie Colliery must be apparent from the fact that it is the sole source of coal within the federated territories. The rate of industrial development North of the Limpopo will be considerably influenced by the rapidity with which coal can be produced in quantities not only sufficient for all current purposes but elastic enough to provide for an increasing demand. This essential public service is a first priority in the concentrated efforts that are being made at Wankie to overcome production difficulties.

All that we are doing in Southern Africa we have done—and will continue to do—in the firm belief that there is no conflict between the interests of shareholders, to whom our primary responsibility lies, and the interests of the people and the countries we serve.

Mining Men

Sir Hugh Beaver has been appointed chairman of the Advisory Council for Scientific and Industrial Research in succession to Professor Sir Ian Heilbron, who retires at the end of September next on completion of his term of office.

Sir John Huggins has been appointed a director of the British Central Africa Co.

Mr. Alexander William Stewart has been appointed a director of Broken Hill South in succession to Mr. Andrew Fairweather, a director since 1944, who is retiring.

Knighthoods for Mining Men.—The Queen's Birthday Honours List published at the end of last week included knight-hoods for Mr. Alfred Chester Beatty, Senr., former chairman of Selection Trust and other mining companies; and for Mr. J. R. Robinson, chairman of British Guiana Consolidated Goldfields, and director of several other companies.

DIVIDENDS

Anglo-Iranian Oil 37½% (July 31)
Apex Mines 25% (August 7)
Apex (Trinidad) Oilfields 10%* (July 23)
Australia and New Zealand Bank 4% (July 9)
British Borneo Petroleum Syndicate 20.833% (July 1)
British Insulated Callender's Cables 7½%
British Tyre and Rubber 15%
Burmah Oil 15% (July 2)
Cam and Motor Gold 20% (August 10)
Consolidated Zinc Corporation 10% (July 1)
Frontino Gold Mines 7½% (July 8)
Globe and Phoenix Gold 3s. i
Gopeng Consolidated 5% i (July 8)
H. E. Proprietary 20% (July 2)
H. J. Enthoven and Sons 20%
Halkyn District United Mines 20 5/6%
Kaduna Prospectors 25% (August 10)
Kaduna Syndicate 33½% (August 10)
Lake View and Star 18½% i
Lobitos Oilfields 10½%
Lydenburg Platinum 5%
Malayan Tin Dredging 1s. i (July 22)
Mount Isa Mines 10% i (July 16)
New Broken Hill Consolidated 15% (July 1)
Neuchatel Asphalte 5% (July 16)
Pahang Consolidated 10% i
Petaling Tin 7½% i
Phoenix Prince Gold 5%
Phoenix Prince Gold 3d.
Pretoria Portland Cement 8½%
Rooiberg Minerals 12½% (August 7)
Selection Trust 42½%
Southern Malayan Tin 1s. i (July 20)
Sungei Kinta Tin Dredging 5% (July 14)
Tekka 1½% i (April 23)
Tharsis Sulphur and Copper 12½%
Thomas W. Ward 5% i
Triefus and Company Pref. Ord. 10%; Ord. 5%
Tweefontein Colliery Ord. 22½%; Cum., Pref. and Part. 4%
Zaaiplaats Tin 20% i

i interim

* tax free

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Established 1894



AUTHORISED CAPITAL - £4,000,000

SUBSCRIBED CAPITAL - £3,000,000

PAID UP CAPITAL - £1,200,000

RESERVE FUND - £1,100,000

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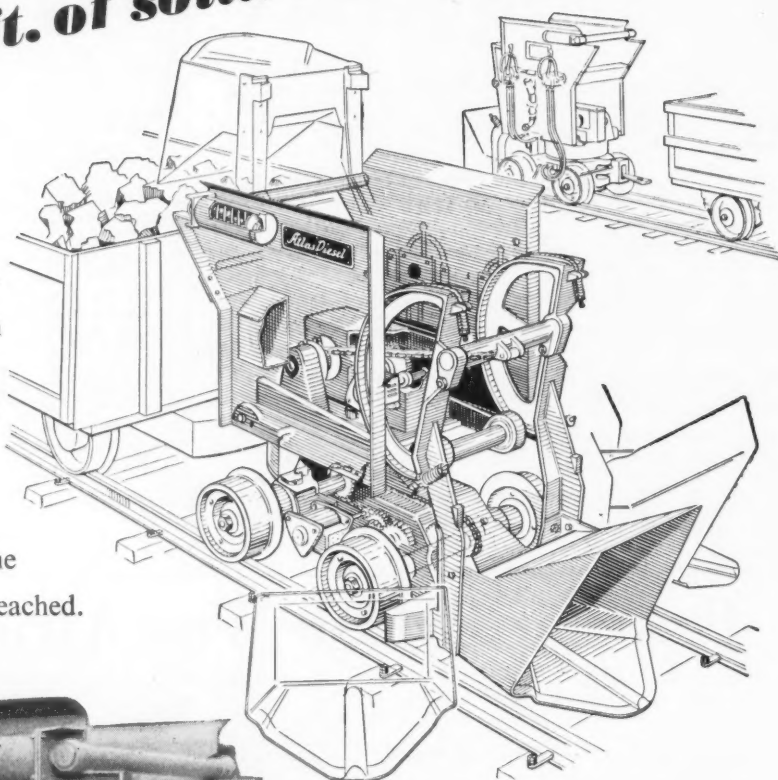
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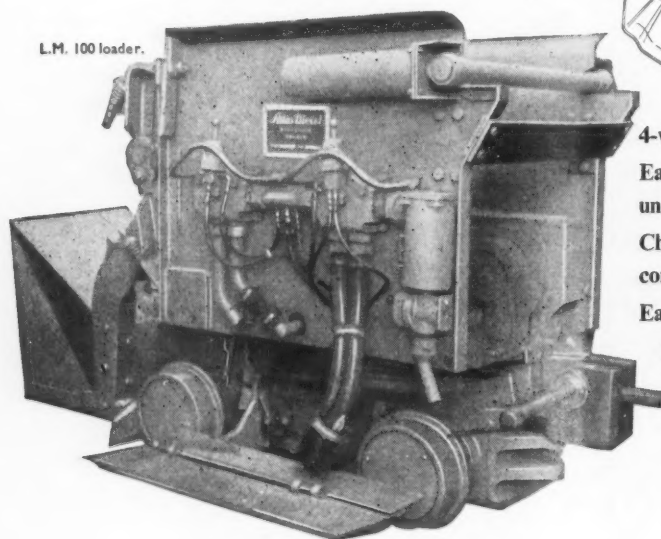
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IDRIS HYDRAULIC TIN

MR. A. G. GLENISTER'S STATEMENT

The fortieth annual general meeting of Idris Hydraulic Tin, Ltd., was held on June 16 at the Company's Offices, 73 Cheap-side, London, E.C.

Mr. A. G. Glenister, Chairman of the Company, presided.

The following is an extract from the Statement by the Chairman, which was circulated to Shareholders:—

Despite a large increase in the yardage treated at the Batu Karang Section, and only a slight decrease in that treated at the Kranji Section, the Company's total output of 235 tons was 87 tons less than in the previous year. This is mainly due to the lower grade of the ground treated, particularly at the Batu Karang Section where operations were largely in the nature of development necessary to the general scheme of work. The results for the year were also adversely affected by the sharp fall in the price of tin during April, 1953. The average cash price for tin metal during 1953 was approximately £720 per ton, as compared with £960 for the previous year. During July and August the price fell below £600, but since then it has improved and the average price for April was £751.

During the year, the sum of £35,199, being 90.4 per cent of the outright War Damage Award, was received in full settlement.

ALLOCATION OF PROFIT

The Profit for the year ended December 31, 1953, after charging £13,187 for taxation, is £15,248, to which has been added the balance brought forward from last year, £7,134, making a total credit of £22,382. The sum of £5,003 has been written off Property Account, and £1,238 has been added to General Reserve, which, after charging the balance of the Rehabilitation expenses, stands at £40,000. Dividends totalling 7½d. per share (less tax) have been paid in respect of the year under review, absorbing £8,250, and the Directors recommend that the remaining balance of £7,891 be carried forward to the current year.

The following table shows how the profit has been applied:—

	Percentage of profit
	1953
Taxation (including tin duty)	68.0
Reserve Transfer	2.6
Written Off Property Account	10.5
Dividends	17.3
Increase in carry forward	1.6
	100.0

The total production for the first four months of the current year is 74 tons and the latest returns show that, as anticipated in the General Managers' Report, the output from the Batu Karang Section is improving.

PROPOSED INTERNATIONAL AGREEMENT

The draft of the proposed International Tin Agreement produced by the United Nations Commodity Conference on Tin held in Geneva at the close of 1953, has now been published and is open for signature and ratification by the interested producing and consuming countries. The closing date for signature is June 30 next and I will not attempt to hazard any opinion as to whether the required minimum number of signatures of both sections of the industry will be forthcoming.

Whether the proposed Agreement is brought into being or not, the tin producing industry faces a period of uncertainty and adjustment and it is quite impossible, at present, to make any forecast regarding future prospects. Shareholders may rest assured, however, that no efforts will be spared by the Board on their behalf.

The report and accounts were adopted.

The meeting concluded with a cordial vote of thanks to the general managers, Messrs. Osborne and Chappel, and the staffs at the mine.

NINE FULLY AUTOMATIC FLAMEPROOF TELEPHONES as certified and used in mines. In perfect condition but iron cases slightly rusted. £12 10s. each. 335 yds. drummed cable of which 270 yds is brand new, comprising ten pairs 3/036 tinned copper V.I.R. taped pairs laid up and rubber-set. Armoured clockwise and anti-clockwise covered overall with braid and bituminous compound. £300 on drum. Near offers accepted. Universal Engineering Company, Havelock Place, Harrow, Middlesex. Telephone: Harrow 1432.

BRITISH-BORNEO PETROLEUM SYNDICATE

The fortieth annual general meeting of the British-Borneo Petroleum Syndicate Ltd. was held on June 9 in London, Mr. Malcolm MacLachlan (Chairman and Managing Director), presiding. In the course of his speech the Chairman said:—

The Profit and Loss Account shows that the revenue for the year, which is derived from our royalty on the production of oil in Brunei, dividends from our investments, and profits on sales of securities, amounted to £296,000. Office expenses and directors' emoluments were £11,000, leaving a net profit for the year of £285,000. In the Appropriation Account this profit is added to the £41,000 of unappropriated profits brought forward from the previous year, giving a total to be dealt with of £326,000. Of this amount taxation absorbs £171,000, £15,000 has been transferred to Investment Reserve and £30,000 has been appropriated to General Reserve.

We now recommend the payment in respect of the year to March 31 last of a dividend of 1s. 3d., free of income tax, per unit of stock. The dividend will be paid on July 1 next.

In addition the directors recommend that £49,998 of the Company's General Reserve be capitalized and applied in full payment of 166,660 units of stock of 6s. each and that these be distributed to the stockholders in the proportion of one fully paid new unit for each six units which are now held.

The profit for the year is again a record and I trust it will be agreed that it is satisfactory that we have been able to recommend a further increase in dividend, to make a share distribution and to maintain our strong reserve position.

It is worthy of record that we have now recommended increases in the rate of dividend for five years in succession and that during that period the share capital will have been raised from £250,000 to £350,000 by the distribution of fully paid shares to our Members.

We have been able to achieve this in the face of the burden of taxation which continues to be onerous. Although the withdrawal of the Excess Levy and the small reduction in the rate of Income Tax last year seemed to be a first step towards relieving industry from excessive taxation it is disappointing that this year no further material relief has been granted. It is beginning to seem that successive Governments lack either the will or the ability to prune the enormous governmental expenditure and to eliminate the waste which is so apparent. Until this is tackled it is not surprising that Governments plead that there are no means to pay for the reliefs which are so overdue to industry. The remedy lies with Government and must be applied, for it is clear that to continue to cripple the productive industries of the country will threaten the whole structure of the Welfare State.

Moreover, there is urgent need for the deadly impartiality of the British tax code to be relaxed and for similar incentive legislation to be applied to British Oil and Mining Companies operating overseas as is enjoyed by their foreign competitors who operate under more flexible tax codes.

To turn to a review of our interests, it will be recalled that one of the original objects of this Company was the exploration for oil in British Borneo and adjacent territories. After many years' work and very considerable expenditure we made arrangements under which the British Malayan Petroleum Company, a member of the Shell Group, took over our oil rights. Our interests now consist of the right to receive a royalty on all oil production in the State of Brunei and also on any oil production which may be obtained in the Klias Peninsula in British North Borneo.

During the year the active production programme of the British Malayan Company in its Seria field in Brunei has been maintained and the royalty from that source has made the principal contribution to our revenue for the year.

The operations of Apex (Trinidad) Oilfields continue to be successful and oil production for the year to September 30, 1953, amounted to 3,102,000 barrels. The profit, after taxation, was £584,000 and an increased dividend of 2s. 6d., free of tax, per 5s. unit of stock was paid for the year. Oil production of the Apex Company for the first eight months of the current year amounts to 2,085,000 barrels.

I trust it will be agreed that the results for the year are satisfactory and that our balance sheet shows that we have continued to build up a strong financial position.

The report and accounts were unanimously adopted, the retiring director, Mr. F. R. Cottell, was re-elected, and resolutions were passed approving a scrip issue of stock to existing stockholders.

BURMA MINES LIMITED

The following summarizes a report of the operating results of **BURMA CORPORATION (1951) LIMITED** (Incorporated in the Union of Burma) for the three months ended March 31, 1954, together with progressive details of Ore Extraction, Production and Estimated Revenue and Expenditure for the nine months ended March 31, 1954.

ORE EXTRACTION

Quarter ended September 30, 1953	...	...	...	...	...	17,800 tons
Quarter ended December 31, 1953	...	...	...	...	...	18,435 tons
Quarter ended March 31, 1954	...	...	...	...	...	23,131 tons
Total for nine months ended March 31, 1954	...	...	...	...	...	59,366 tons

PRODUCTION

Quarter ended		Concentrating Ore	Assays		
		Milled (tons)	Oz. Silver	% Lead	% Zinc
September 30, 1953	...	19,406	13.04	15.843	12.577
December 31, 1953	...	18,550	12.501	15.286	9.231
March 31, 1954	...	23,698	12.503	15.196	9.941

Marketable Products were as follows:

Quarter ended	Refined Lead	Refined Antimonial Lead	Refined and Doré Silver	Copper Matte	Nickel Speiss	Zinc Conc. 57%-58% Zn.
	Tons	Tons	Oz.	Tons	Tons	Tons
September 30, 1953	2,188	1	124,914	59	—	2,799
December 31, 1953	1,785	—	170,343	18	—	1,817
March 31, 1954	2,290	95	303,317	53	150	2,487
Totals for nine months ended March 31, 1954	6,263	96	598,574	130	150	7,103

ESTIMATED REVENUE AND EXPENDITURE

	For Quarter ended March 31, 1954		For the nine months ended March 31, 1954	
Estimated Gross Revenue (after adjustment of value of metal stocks) ...	K.61,03,100	£457,732	K.1,42,39,200	£1,067,940
Estimated Operating Expenditure ...	K.49,33,900	£370,042	K.1,17,33,100	£879,983
Estimated Excess of Revenue over Expenditure ...	K.11,69,200	£87,690	K.25,06,100	£187,957
Estimated Taxation ...	Nil	Nil	Nil	Nil
Estimated Depreciation on Machinery and Plant ...	K.1,51,800	£11,385	K.3,87,700	£29,077
Capital Expenditure ...	K.5,08,200	£38,115	K.9,16,800	£68,760

No provision has been made for taxation as taxation allowances brought forward exceed the estimate of profit for the nine months to March 31, 1954.

The Sterling figures shown are based on a Rate of Exchange of 1s. 6d. per Kyat.

GENERAL

Mine Ore Extraction at 23,131 tons increased by 25.47 per cent over the previous quarter.

The number of underground workers at the end of the March Quarter was 1,407, a decrease of 9 men over the period.

To meet the urgent need for more skilled underground labour the Government of the Union of Burma has sanctioned the recruitment from India of a further 300 Gurkha miners.

At Mansam Falls Hydro-Electric Generating Station, No. 4 Generator (4,000 kW.) was successfully brought into commission, bringing the total rehabilitated capacity of the Station to 8,000 kW., in preparation for the projected increased Milling capacity now being planned.

Railway and Forest Departments have successfully met increased demands in the Quarter, and rehabilitation and building of new accommodation has been maintained commensurate with requirements.

37 Dover Street, London, W.1.

Mineral Resources Division, Colonial Geological Surveys requires **SCIENTIFIC OFFICER** in laboratories at Imperial Institute Building, London, S.W.7. Qualifications: 1st or 2nd Class Honours Degree in Chemistry or equivalent, with special emphasis on inorganic chemistry and interest in and sound knowledge of mineral analysis. Experience of Spectrographic analysis an advantage. Duties: analysis and examination of minerals and their products, rocks, fuels, etc., and development of methods of analysis. Starting salary, according to age and experience, in scale £470 x 30—£680 x 35—£855 (men), £470 x 25—£545 x 30—£725 x 25—£750 (women). F.S.S.U. Superannuation. Other conditions as for U.K. Scientific Civil Service. Application forms from M.L.N.S., Technical and Scientific Register (K), Almack House, 26 King Street, London, S.W.1., quoting F.382/54A. Closing date July 10, 1954.

REFINERY DEPARTMENT MANAGER WANTED

A vacancy exists for the position of **MANAGER IN THE ELECTROLYTIC REFINING DEPARTMENT** of an important Midland Copper Refinery. The position calls for a man with experience in this field, capable of taking complete control, and supervising future developments. Applications from Chemical Engineers and Physical Chemists with experience in electrochemical work, or extractive metallurgy, will also be considered. The position is permanent and pensionable, and salary will be according to experience and qualifications. All applications will be treated in strict confidence. Existing staff have been informed. Write to Box No. 555, The Mining Journal, 15 Wilson Street, Moorgate, London, E.C.2.

THE CENTRAL MINING - RAND MINES GROUP

DECLARATION OF DIVIDENDS

NOTICE IS HEREBY GIVEN that DIVIDENDS have been declared payable to shareholders registered in the books of the undermentioned Companies at the close of business on June 30, 1954, and to persons presenting the respective Coupons detached from Share Warrants. Dividends on shares included in Share Warrants will be paid in terms of a notice to be published later by the London Secretaries of the Companies.

The Dividends are declared in South African currency and become due on July 1, 1954. Payment from the Office of the London Secretaries will be in British currency at par provided that should there be any difference that may be regarded by the Boards as material between the two currencies on July 1, 1954, payment will be made on the basis of the equivalent British currency calculated at the rate of exchange ruling on that date.

Warrants in payment will be posted on or about August 5, 1954 to shareholders at their registered addresses or in accordance with their written instructions. Warrants will be despatched from the Registered Office, Johannesburg, to addresses in Africa south of the Equator and from the Office of the London Secretaries to addresses elsewhere. Instructions which will necessitate an alteration in the Office from which payment is to be made must be accepted by the Companies on or before June 30, 1954. Other changes of dividend instructions to apply to these dividends must be received by the Companies not later than July 23, 1954.

The Transfer Books and Register of Members will be closed in each case from July 1 to 7, 1954, both days inclusive.

(Name of Company Each incorporated in the Union of South Africa)	Dividend No.	Coupon No.	Dividend Per Share s. d.
Rand Mines, Limited	102	102	3 0
Blyvooruitzicht Gold Mining Company, Limited	17	—	1 2
City Deep, Limited	69	69	6
Consolidated Main Reef Mines and Estate, Limited	89	86	1 9
Crown Mines, Limited	106	106	3 0
Durban Roodepoort Deep, Limited	67	67	1 6
East Rand Proprietary Mines, Limited	69	70	1 9
Modderfontein East, Limited ..	54	35	1 6
Transvaal Gold Mining Estates, Limited	87	87	6

A. MOIR & CO.

London Secretaries of the above-named Companies.

Office of the London Secretaries :

4 London Wall Buildings, London, E.C.2.

June 10, 1954.

ROSE DEEP, LIMITED

(Incorporated in the Union of South Africa)

REDUCTION OF CAPITAL

The resolution providing for the reduction of the capital of the Company to £595,000 in 700,000 shares of 17s. each and the return to shareholders of 2s. per share in cash, duly passed at the Ordinary General Meeting of the Company in Johannesburg on May 11, 1954, has now been confirmed by an Order of the Supreme Court of the Union of South Africa which will be registered on June 30, 1954, whereupon the reduction will immediately become effective.

The repayment of 2s. per share in cash will be made to shareholders registered in the books of the Company at the close of business on June 30, 1954, and to persons presenting Share Warrants to Bearer in circulation on that date.

The return of capital is payable in South African currency and becomes due on July 1, 1954. Cheques in payment will be posted to registered shareholders on or about August 5, 1954. Payment from the Office of the London Secretaries will be in British currency at par provided that, should there be any difference that may be regarded by the Board as material between the two currencies on July 1, 1954, payment will be made on the basis of the equivalent British currency calculated at the rate of exchange ruling on that date.

The Transfer Books and Register of Members will be closed from July 1 to July 7, 1954, both days inclusive.

Holders of Share Warrants to Bearer in circulation at June 30, 1954, can, on application to this address, or to the Crédit Lyonnais, 19 Boulevard des Italiens, Paris, obtain listing forms and information as to the procedure to be adopted to enable them to receive the return of capital of 2s. per share.

A. MOIR AND CO.,

London Secretaries.

Office of the London Secretaries,

4 London Wall Buildings, E.C.2.

June 17, 1954.



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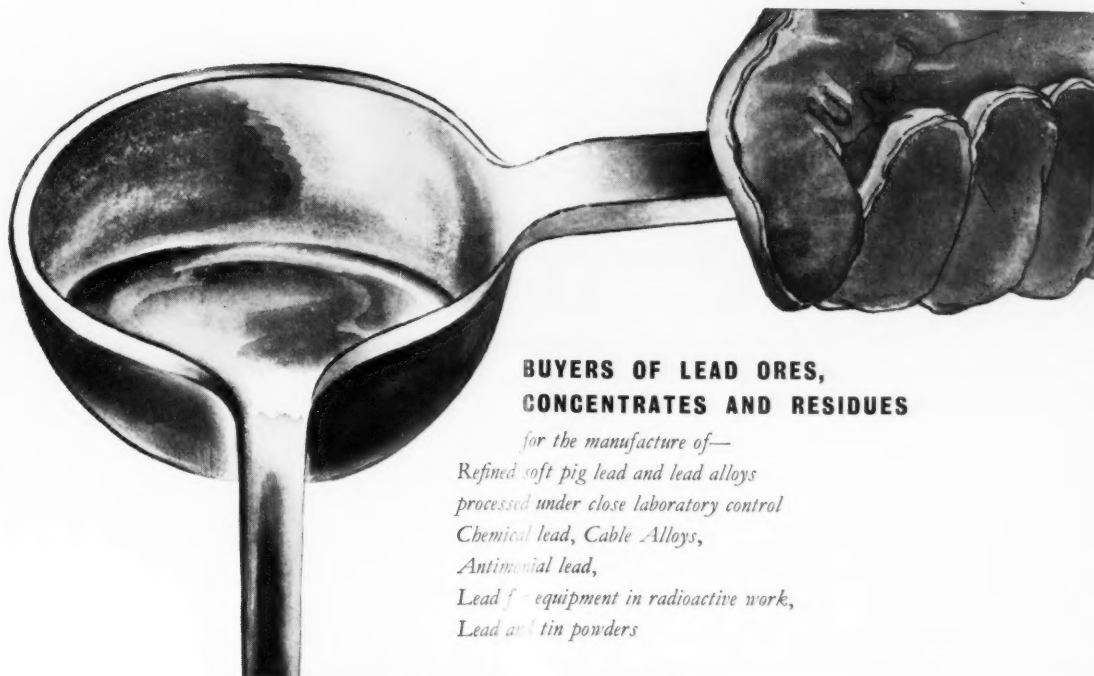
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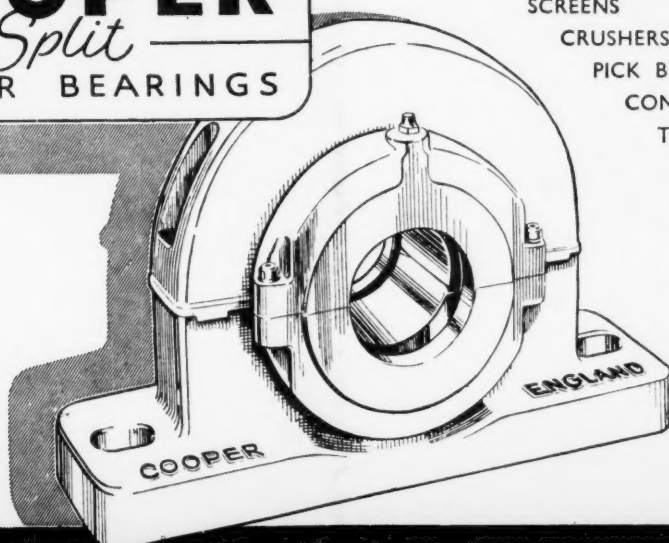
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